READING AND STUDY

YOAKAM

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READING AND STUDY

More Effective Study through Better Reading Habits

BY

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To
My Mother

PREFACE

During the past fifteen years teachers have been offered a series of excellent books for professional reading on the subject of how to study and another series of very practical books on methods of teaching reading; but till now no one has written a book which deals primarily with reading in relation to study, or the reading type of study. It has been the author's purpose in this volume not only to bring together under one cover suggestions for developing ability to study in reading situations primarily, but also to suggest a plan for developing this ability in whatever situation study may be met throughout the elementary grades. It is hoped that the material presented in this volume will make it possible for teachers to understand more fully the nature of reading and the nature of study and the relation that exists between the two.

It is not enough to say to teachers that if they will teach desirable silent-reading habits they will thereby train children to study. This is only a half truth. Nor is it enough to provide them with a book on how to study which discusses merely the general problems of study in the traditional way. Teachers need to know in what respects teaching to read is teaching to study and what else must be done in addition to teaching the

mechanics of reading before children can learn to study effectively. The writer believes that children need a *course of study in study* and he has attempted to furnish this in a tentative form.

Much of what is offered in this volume is intended to be merely suggestive. The author believes, however, that the volume presents a working plan for the development of ability to study and that it will be of help to teachers, teachers in training, supervisors of instruction, and administrative officers, in their attempts to give the child what many are agreed is necessary if he is to study well; namely, specific habits of study which are the result of long and careful training.

It is inevitable that in writing such a book, the writer should be indebted to many who have preceded him in the fields of reading and study. He gratefully acknowledges his indebtedness to these writers, to each of whom he has attempted to give, in the ensuing pages, due credit for ideas gained.

There is a more personal debt, that of a student to his teacher, which the writer wishes to acknowledge. To Dr. Ernest Horn must be given credit for the original stimulus to thinking about the problems herein discussed, if not for many of the ideas contained in this book. It is difficult to say to what extent attendance in Professor Horn's classes has influenced the writer's thought and to what extent the ideas here presented are those of his former professor. For any evidence of lack of wisdom, however, the writer assumes full responsibility.

Grateful acknowledgment is also made to the writer's colleagues, Miss Bess Goodykoontz, Dr. Grace A. Taylor, and Dr. Grover H. Alderman, for reading the manuscript and making helpful suggestions.

GERALD ALAN YOAKAM

PITTSBURGH, PENNSYLVANIA
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READING AND STUDY

CHAPTER I

Introduction

"Study" and "reading" are terms closely associated in use. — The terms "reading" and "study" have long been closely associated in common speech and thought. Seldom has any attempt been made to distinguish one from the other. The American school, devoted as it has been to the study of textbooks, has been almost entirely a reading school. Lesson hearing, or reciting, necessitating preparation of the lesson from the textbook, has occupied the lion's share of the time. For this reason study has been an activity made up largely of reading. Teachers and students, naturally, have assumed that reading is study and study is reading. McMurry noted this fact and quoted Earhart's investigation to show that neither children nor teachers conceive of the study process other than as a process of reading to memorize the content.[1] In Chapter III of the present book, recent investigations by the writer are cited to prove that children still regard reading and memorizing as practically synonymous with study. In the world of the child and in that of most adults, therefore, study and reading go hand in hand; not

[1] McMurry, F. M. *How to Study and Teaching How to Study*, Chapter I, pp. 4–11. Houghton, 1909.

much study is done without the use of the printed page, or, if it is done, it is not recognized as such. Study means to most people the perusal of the printed page, the degree of intensity depending upon the degree of maturity and the previous training of the reader.

"Study" and "reading" are not identical in meaning. — Nevertheless, in spite of the close association of the terms in common speech and the presence of reading as an activity in study, the two terms are not synonymous in meaning. There are reading activities which are not study and study activities which are not reading; but there are obvious close relationships which are seen even by the casual observer. He knows that when a child is attempting to master a textbook lesson, the activity is reading and at the same time study. He also realizes that without the ability to read, such study as is done with books in this manner is impossible. It is natural to conclude, then, that teaching a child to master the mechanics of the printed page is in effect teaching him how to study. In a limited sense, this is true. But there are many activities in study that are not reading in this sense. Study and reading need to be more clearly defined and their relationships pointed out. Teaching the child to read, unless reading is fully understood in its broader meaning, seldom teaches him how to study effectively. The ability merely to pronounce the words on the printed page, while very essential, is only the preliminary preparation for study in its broader sense.

Errors in teaching due to lack of definiteness. — The failure of teachers to analyze either the process of

reading or of study results in many errors in instruction. Teachers assume that teaching the child to read efficiently is sufficient preparation for study. They do not perceive clearly the problems involved in either the teaching of reading or the development of study habits. As a result the school fails to teach either reading or study, or both, effectively. The teacher is often so much engaged in teaching the *mechanics* of reading that she fails to teach its *uses;* she cannot see the major purpose of teaching reading because of the multiplicity of detail in teaching the child to recognize and pronounce words. Nor, on the other hand, does she understand the place of reading in study, what tools are involved in study, or what abilities are utilized in study other than reading. It is obvious that when the nature of reading and study are not clear there can be no effective teaching of either.

Opportunities for teaching to study neglected. — Traditionally, opportunities for teaching children to study have been neglected because of failure to realize what these opportunities are. Children still learn to study largely by incidental methods. This means that some of the bright children discover methods of study that are efficient for them and that mediocre and backward children fail to master techniques of study. Schools, in general, do not have definite programs for teaching children to study; in this connection, little organized, systematic, and skillful teaching ordinarily takes place. As a result, the majority of children do not learn to study, as investigations already made

clearly show. Adults can also furnish ample evidence from their experience to prove that the schools have failed to instruct them efficiently in this respect.

Ineffective reading practices prevail. — Failure to analyze reading and to determine its uses has also resulted in practices which are inefficient and wasteful. Until very recent years the schools stressed oral reading almost exclusively. This much was clear to the teacher and the maker of textbooks — that unless the child could pronounce words, he could not read the printed page. Too much emphasis is still expended on teaching the child to attack new words skillfully. The primary teacher engages in teaching words and methods of learning to pronounce new words. As a result the meaning of words is often neglected. This tendency to stress the mechanics of word pronunciation persists, however, after the primary grades; and the reading exercises of the middle grades often become a dreary reiteration of word-pronunciation and word-study, with an almost criminal neglect of the worth of the subject matter thus pronounced and a total lack of understanding of what reading is for and where instruction is tending. Many children never pass the word-pronunciation stage. Thoughtful reading for purposes of gaining information therefore becomes very difficult. The effect of this practice upon work in the content subjects of the elementary grades is very bad. Children often do not read sufficiently well to solve problems in arithmetic, or to understand the subject matter in history, geography, and other subjects well enough to discuss it intelligently and profit by its teachings.

There is a serious breach between the methods of teaching reading and the efficient use of reading in situations in which it naturally should function to enable the child to obtain information economically.

Wrong materials used in teaching how to study. — As a result of the lack of a clear understanding of the uses of reading in life and in school, the school often employs the wrong material for teaching the child how to study. The belief that good literature is the natural right of the child, and that childhood should be offered the best that the race has accumulated, leads to failure to distinguish between reading for pleasure and appreciation, and reading for information. The reading of the elementary school, which, presumably, is to train the child to read either for purposes of pleasure and appreciation or for purposes of information and knowledge, is predominantly of a recreatory character. No clear purposes are apparent in the teaching except the single one of mechanical efficiency and the more or less clear objective of training the child to read the world's best literature as an aid to building character and developing good taste. The development of the power to read materials of a non-recreatory type for informational purposes is neglected. That children cannot be taught to read effectively for study purposes in a purely recreatory reading atmosphere, is now believed by many. The failure of adults to read for their own betterment valuable material of a factual character, such as is contained in the better weekly and monthly reviews and elsewhere, can doubtless be traced partly to this traditional emphasis by the school

on recreatory types — an emphasis due to our lack of definite objectives in both reading and study.

Right kinds of materials lacking. — The right kinds of materials for teaching children to study the printed page have been and are lacking in most schoolrooms. Reading textbooks have been, too generally, collections of excerpts from longer literary selections; poetry and narrative have predominated in their make-up. Even though readers are improving in this respect, there is needed to-day a greater number of simple, well-written books on subjects related to the child's studies in school. These books should be furnished as reference material and the child should be instructed in how to use them efficiently. There is needed also a special type of reader to furnish material of a factual character which will supplement the textbooks of the school subjects. Teachers should be trained to use this and other factual reading material effectively. Such material has been particularly lacking in the lower grades of the elementary school. Books of this type, however, are now being prepared and printed and we may look forward to better conditions in the near future. The prospect is also brightened by the fact that teachers-in-training are now being instructed in suitable methods of handling informational reading material.

Teaching children to study not begun soon enough. — Although the school has generally begun to teach the child to read as soon as he has entered, it has not begun to teach him to study until some years later. Often it has not centered on the problem of teaching the child how to study at all but has left this to inci-

dental teaching. As a result few children have learned economical and effective habits of study. It is becoming clear that ability to study is made up of a compounding of attitudes, knowledges, skills, and habits; and that good study habits are not formed if teaching children to study is delayed until they enter the upper grades or the secondary school. If the possession of reading skill in a fair amount were sufficient assurance that a child would possess good habits of study later in life, the teaching of study skills might be delayed or omitted and the elementary school be allowed to concentrate on reading as a mechanical process. Such teaching has failed, however, and it is now becoming clear that teaching the child to study is involved in the process of teaching him to read; but that the method of teaching reading must be changed if he is to realize the benefit of the teaching process and that certain other items must be added to the teaching of reading if the child is to become a good student of books.

Teaching of reading separated from teaching of subject matter. — The teaching of reading, concentrated on mechanical problems, has tended to make reading as a subject narrow in its nature and inefficient in reaching its fundamental objectives. Reading has been taught as reading in one period of the day; and subject matter, involving the use of reading, has been taught as subject matter in other periods. This illustrates the traditional tendency to pigeonhole subjects. The teacher of reading, in such a situation, has naturally tended to teach the mechanics of reading. Teachers of subject matter have at times taught reading

effectively but in general the subject matter has absorbed the greater share of attention. As a result, children have not learned to *read* their subjects. Investigators have found that even though children can read narrative material quite readily, they have difficulty in reading factual material in connection with school subjects. This has made the study of the content subjects relatively inefficient. Teachers of subject matter must be interested in the reading problems connected with their subject matter. It is in connection with the content subjects that children will practice the skills that are developed in the purely training period devoted to reading. The separation which has existed between reading and study of content materials must be eliminated.

Lack of definite objectives in study. — While objectives in reading may have been definite enough, although inadequate, objectives in study have suffered from lack of definition. A clear analysis of the nature of the two processes would supply this deficiency and make the development of both reading and study systematic and purposeful. The logical outcome of the lack of such a set of objectives has been ineffective effort.

A thorough analysis needed. — A thoroughgoing analysis of reading and study must take place, then, before definite objectives can be set up. Reading must be analyzed in order to show what it is, how many types of it there are, and how each functions in study. Study must be analyzed in a similar manner to determine to what extent it is a reading process and what

other activities are involved in it. Such analysis will bring the whole subject of reading and study into clearer relief, make possible the setting up of objectives in each, show where the two overlap, and permit the outlining of a definite course of training which will enable teachers to train children effectively to read for a variety of purposes, including that of study.

Such analyses already begun. — Such analyses have already been begun. The Rochester *Chart of Reading Attainment* [1] is a preliminary analysis of reading and study which outlines objectives under four major headings: (1) Permanent interests in reading, (2) economical and effective study habits, (3) economical and effective use of books, and (4) mastery of the mechanics of reading. Horn and McBroom have made a valuable analysis of reading into its various types and have carried the analysis into considerable detail.[2] These analyses furnish the basis for a direct attack upon the problem of teaching children to read and study effectively.

What this book proposes. — In this volume it is proposed to examine into the nature of reading and study, to show where reading and study cross, to outline as fully as possible the abilities involved in study, to suggest a course of study for developing ability to study in the elementary grades, and to discuss this tentative plan as it should be carried out in the various

[1] O'Hern, J. P. "The Development of a Chart of Attainments in Reading," *Journal of Educational Research*, pp. 180–94. March, 1921.

[2] Horn, Ernest and McBroom, Maude. "A Survey of the Course of Study in Reading." *University of Iowa Extension Bulletin*, No. 93, February, 1924.

grades. Certain other problems which have to do with reading in study situations will also be treated. It is hoped that a consideration of these problems will be of service in enabling teachers to organize more effectively their teaching and to develop systematically habits of reading in study situations and general habits of study as well.

SUMMARY OF CHAPTER

"Reading" and "study," while commonly closely associated in meaning, are not synonymous terms. There are certain forms of reading which do not involve study, and certain forms of study which do not involve reading. Failure to analyze the processes of reading and study sufficiently has resulted in certain errors in teaching children to read and to study. Opportunities for teaching children to study have been neglected. Likewise, reading has been ineffectively taught because of overemphasis upon mechanical matters. Wrong materials are used to teach children to read for study purposes and the right kind of materials for developing abilities in study are not plentiful at the present time. Children are not taught how to study soon enough, because of the failure of teachers to understand the nature of the study process. The teaching of reading is commonly separated from the teaching of subject matter so widely that children are not taught to read the latter skillfully. Lack of definite objectives in both reading and study are responsible for unsatisfactory progress in both. A thoroughgoing analysis of both processes is therefore needed. This

has already been begun in a preliminary way. This volume will extend these analyses and attempt to suggest methods of developing reading ability in study.

SUGGESTIVE PROBLEMS [1]

1. Give reasons to show that children generally do not realize that reading is a tool highly important in study.

2. How can you show children that time can be saved by the possession of a good rate of reading?

3. Show that children do not sense that reading literature is one thing and that reading factual material is another.

4. How can you cause the child to be more cordial toward reading history, biography, travel, and science in the early elementary school?

5. Show why it is that teachers are not at present teaching effective reading in connection with the content subjects.

6. To what extent is it true that teachers are laying too much emphasis upon mechanics in teaching reading and too little upon the value of content.

[1] The suggestive problems appended to each chapter refer the reader to his general experience as well as to the text itself. Not all problems are answered in the text.

CHAPTER II

The Nature of Reading

In this chapter a discussion of the nature of reading will be attempted. This discussion is to be based upon scientific evidence in so far as that is available. Four aspects of the problem will be discussed: (1) the nature of the reading process and reading ability, (2) the uses of reading in life, (3) the types of reading classified according to the rate of reading, and (4) a discussion of other factors which throw light on the nature of reading.

I

THE READING PROCESS AND ABILITY IN READING

Scientific study of reading new. — In spite of the fact that the art of reading is some seven or eight thousand years old, or even older, the science of reading is comparatively in its infancy. Huey termed school reading "an old curiosity shop of absurd practices." He remarks also that

> . . . to the average reader the process by which he gets his pages read is not understood very much better than was the [reading] performance of Livingstone by the savage. Indeed, until twenty-five years ago, science could not give a very much better specific account.[1]

[1] Huey, E. B. *The Psychology and Pedagogy of Reading*, p. 5. Macmillan, 1908.

The scientific study of reading, then, if Huey's statement is accepted, is not over forty or fifty years old. Gray has made a complete survey of the research studies in reading [1] which have been made during this period. He lists four hundred thirty-six printed reports which have been published since 1884, three hundred fifty-one of them in the last fifteen years. These research studies have been made by psychologists in the laboratory, by makers of tests of reading, and by experimental students of education in the classroom. In addition, experts in reading have been examining the process from every angle. Out of all this activity certain facts are beginning to appear which make the statement of Huey far less true now than it was fifteen years ago. The publication of scientific reports, as well as those of a less scientific character, has created a literature of large proportions which is generally unavailable to teachers in the classroom. Material will be drawn from these sources in this discussion.

Reading is interpretation of written language. — Before referring to the result of scientific research, certain more obvious facts concerning the nature of reading may be cited, the most apparent of which is that the act of reading involves the use of language. The language activities of normal human beings include speaking, listening, writing, reading, and thinking. Historically, oral speech is the oldest form of true language. Oral language has been used to transmit ideas for thousands of years; but, speaking in terms of

[1] Gray, W. S. *A Summary of Investigations Relating to Reading.* University of Chicago, 1925.

racial development, the writing down of ideas for the purpose of transmission to others and the preservation of human thought in written form is very new. Printing is an even later development. For these reasons, the art of reading being one of the more recent developments in human progress, its relation to other forms of language is not yet clearly understood in all its phases.

Introspective analysis by various psychologists has, however, led to a certain understanding of the reading process. They have observed that words are the signs for ideas. Words have two symbols — the visual and the auditory. The auditory symbol of a word is learned through hearing it spoken. When the young child enters school he already has command of from one thousand to five thousand spoken words. Of these, he can understand more than he can speak. He cannot, at that time, read or write any of them, since reading and writing are unknown arts to him. Up to the time of entering school his acquisition of language has been gained by the almost effortless method of imitation of the speech used by people around him. From this time forth, however, he is confronted by the problem of associating the verbal symbols of words and their meanings with the visual symbols of words and their meanings. He is confronted by a problem of working with a new medium of thought. As far as he is concerned, reading, for some little time, is a process of associating word signs with their meanings.

The process of reading is, however, more than the mere learning of an arbitrary system of signs for words.

It is fundamentally a process of interpreting the written ideas of another. The printed page represents the signs for a series of related ideas which have been associated by the author and committed to permanent form in writing. In order to produce these ideas the writer has been compelled to go through all the processes of learning and thinking. He has formed perceptions, developed concepts, associated ideas, evaluated those ideas, memorized them, organized them into new forms, had them modified and given meaning by experiences, and finally has committed them to permanent form by setting them down in writing. There he has left them for the use of future readers. And these printed symbols are potent stimuli to awaken ideas and transmit the thought of the writer to others.

The process of interpreting these symbols and reproducing the ideas of the writer is no simple thing. The reader is confronted by the task of reacting to the stimuli which the writer has committed to paper and of going through a series of processes similar to, although not in every respect identical with, those in which the writer engaged when he wrote the material. The reader must perceive the symbols; he must associate with those symbols the appropriate meanings; he must recall past experiences which give meaning to the symbols; he must evaluate them, accepting those meanings which are appropriate and rejecting those meanings which are inappropriate; he must reorganize the ideas into new patterns to be used for particular purposes; and he must retain them for future use. In addition to these complex mental activities, he must learn

how to use the books and magazines in which written ideas are found and the index, table of contents, and other parts, so that he may readily locate material for his use. It is for these reasons that various writers have called attention to the fact that reading is an act which includes all the complexity of an act of reasoning or thinking, as well as the mechanical reactions of word recognition and pronunciation.

Some writers would apply to the term "reading" a meaning of rather limited character. They would include as reading only the interpretation and reproduction of an author's meaning, not the evaluation of this meaning and its modification. To the latter process they would allot some other term which they have as yet failed to supply. If such a concept of reading is accepted, then the process of reading, though simplified, is still difficult and complex.

Brooks explains the reading process thus:

> From the time we look at the page until we speak the words printed thereon, we perform six chief processes: (1) Visual impressions are received upon the retina. (2) Nerve impulses pass from the retina to the visual areas of the brain. (3) Associations which give meaning to these nerve impulses are aroused or established. (4) Impulses pass from the visual centers to the motor speech centers. (5) Nerve impulses pass from the motor speech centers to the muscles of the tongue, lips, vocal cords, and certain other muscles of the cheek and throat. (6) The organs of speech are moved and utter the words.
>
> When the child is learning to read and the teacher pronounces the words to him, their sounds are connected with the visual impressions of their forms. The first and second steps above are accompanied by three other steps: (1) Auditory impressions are received in the ear. (2) Nerve impulses pass from the ear to the auditory centers of the brain. (3) Nerve impulses pass between

auditory and visual centers, establishing associations between the form and the sound of the word.[1]

Smith[2] in his analysis of the processes involved in the recognition and interpretation of words and sentences makes a somewhat different contribution. He enumerates the following as characteristics of the reading act:

1. Recognition of the word form as familiar.
2. Feeling of confidence on the part of the individual that he knows the word and could use it if necessary.
3. Mental pronunciation or inner speech.
4. Tendency toward structural associations; *i.e.* associating word with other words in phrases and sentences.
5. Tendency to react in appropriate manner to the word.
6. Reacting to sentences rather than to words — tendency to read sentences.

The second of these two explanations of the reading process emphasizes the more significant phase of it. It is as an act of thinking that it reaches its highest significance. As a mechanical process of word pronunciation in the past it has received great attention; but at present it is coming into its own as an interpretative, thoughtful mental activity. In this sense it must be regarded as a language problem and must not be dissociated from its true connection with oral language. Reading is a process of interpreting written language.

Perception and recognition.[3] — In the preceding paragraphs of this section various processes in the act of reading have been treated in general. These will now be discussed in more detail, largely in the light of

[1] Brooks, F. D. *The Applied Psychology of Reading*, pp. 26–27. Appleton, 1926.

[2] Smith, W. A. *The Reading Process*, pp. 13–19. Macmillan, 1922.

[3] The reader is referred to Gray's *Summary of Investigations in Reading* for a complete treatment of this and other problems in this section.

results of scientific research. Among such processes have been mentioned perception and recognition of the meaning of the printed symbol. Perception was one of the first problems to be attacked by scientific students. Unlike the problem of interpretation of meaning, it yields quite readily to scientific study. Investigation of perception has shown how the printed word is seen through the use of the human eye and brain. Among the scientific facts discovered, the following seem to the writer to be most significant.

1. *The unit of perception in reading for most people is not the letter, as was formerly thought by those who believed in the alphabet method of teaching, but rather the word, phrase, or short sentence.* An experiment by Dodge showed that when the practiced adult reader attempts to read by words rather than by sentences he is seriously embarrassed in the process. This fact has great significance for teachers of reading because it suggests the desirability of teaching by modern word and sentence methods rather than by emphasis upon the analytic methods of the past. The reader forms a percept of the word as a whole rather than of the letters of the word separately. This is illustrated by the following arrangement of letters which are at first glance probably meaningless:

mac hiner y
inco mpr ehensib le

These words are easily recognized in their ordinary arrangement

machinery
incomprehensible

2. *Words are perceived in groups rather than as single words.* The human eye has a span of perception which may include several words. Words familiarly associated are recognized easily because of this fact. If the eye had to fixate upon each letter of a word or each word in a phrase in order to perceive the word or phrase, the process of reading would be greatly increased in difficulty. It is easy for the practical reader to read at a glance such phrases as *down the street*, *over the hill*, etc., for such phrases have come to represent ideas as wholes rather than as separate words. *Down the hill* is a word pattern for one idea and *up the hill* is a word group which presents an entirely different idea. The sight of such a familiar word group as a whole is sufficient for recognition by a practiced reader.

3. *Perception and recognition differ.* Perception has to do primarily with the visual process and recognition with the mental process of associating a word symbol with its meaning. The number of words that can be *seen* at a single fixation of the eye on the printed line represents the so-called *span of perception.* The number of words that can be *recognized* or of which the meanings can be understood, represents the *span of recognition.*

4. *The span of recognition grows with maturity and training.* The ability to recognize words, phrases, and sentences as wholes rather than as parts grows with maturity. Special training also increases the span of recognition. Gray says that the process of learning to read is, in one respect at least, a matter of enlarging the span of recognition. A wide span of recognition characterizes the good reader. A trained adult reader

has a larger span of recognition than an untrained reader. Trained children often develop wider spans of recognition than untrained adults.

5. *Good readers can see more words at a fixation than they can recognize.* This principle has been developed by studying the eye movements of adult readers by photographic apparatus. The span of perception is wider than the span of recognition in almost all, if not all readers. This is easily illustrated by the following. If the reader will fix his eye upon the sentence below at the word *cause*, he will note that he can see clearly at a single fixation, let us say, the complete word *cause*, and, less distinctly, on either side, several other words.

Some words cause difficulty to most readers.

When the eye is fixated on *cause* it is found that, while other words make some impressions on the eye, these impressions are not clear enough to cause recognition of the words until the eye is moved either to the right or left. The number of words which can be recognized at one fixation was found by Dearborn to be from 1.0 to 1.9 by adults reading columns in newspapers silently. Schmidt found that adult silent readers recognized from 0.93 to 2.15 words per fixation.

6. *The manner in which the individual word is recognized varies with different individuals.* Familiar words are recognized by noting the general form; difficult words are seen in detail. The adult reader would at a glance recognize the following familiar words:

dog house fire man woman

but might be forced to examine in detail such words as the following:

bilingual historicity psychiatry meretricious

Even familiar words must be looked at with some care at times. Among such are *financier*, *fiancée*, *complimentary*, *complementary*, *stationery*, and *stationary*.

7. *Words in meaningful content are more easily recognized than isolated words and words in meaningless arrangements.* There are certain words which sometimes cause difficulty when standing alone that are easily recognized in context; as,

quite quiet

These are not likely to be confused when seen in phrases such as

quite soon a quiet afternoon

The following words cannot be read so quickly in this group, where the arrangement is meaningless,

Brown Ferry Harper's John took

as in this, where it has significance,

John Brown took Harper's Ferry

8. *Similarities in forms of words cause difficulties in recognition.* In the following pairs of words, the reader may, at first glance, mistake one for the other:

complimentary	magnified	balance
complementary	modified	valance

It is often necessary for the reader to readjust himself to a sentence because of a mistake in confusing two similar words.

9. *The span of perception is less subject to training than the span of recognition.* In the case of young children the span of perception may be increased to some extent, but, on the whole, the span of perception seems to be somewhat less modifiable than the span of recognition. That is to say, the range of vision which allows the individual to perceive words has a physical limit that makes it possible to increase its width only slightly in the case of children and little or not at all in the case of adults.

10. *The span of recognition seems to develop periodically.* Buswell found that growth in the span of recognition is very rapid in the first four years, develops little in the middle grades, and rises again in the middle high school years. This fact has great significance because it shows that as reading is taught at present, at least, the opportune time for development of rapid reading seems to be in the early grades, and in the middle grades of the high school.

The facts presented in the preceding discussion of perception and recognition seem to show that, from the standpoint of the nature of perception and recognition, reading is an entirely different process from what it was believed to be before scientific investigations of these processes took place. It begins with the larger unit rather than the smaller. In efficient reading, words, phrases, and sentences are recognized habitually rather than letters or syllables. Knowledge of word forms is not built up synthetically by the "a-b ab" process; instead, the reader first learns words,

phrases, and sentences as wholes, and later analyzes these larger wholes to note similarities and differences when these are essential to understanding. These facts have determined the prevailing present-day methods of teaching young children to read.

Eye movements. — It has been implied in the preceding discussion that the eyes do not remain fixed on single words, do not see the printed line at a single fixation, but, rather, that they move across the page in the process of perceiving and recognizing words. The mere recognition of words as wholes does not constitute reading. Knowledge of the nature of the movement of the eyes, therefore, is essential in order to understand the reading process from its physiological side. This knowledge has been gained by photographing the eye during the reading act by means of precise laboratory instruments. Numerous studies have been made by a number of competent investigators in our country at the Universities of Chicago and Columbia, and in certain universities in Europe. Their investigations have established the following facts:

1. *The eye moves across the printed page in a series of rhythmic pauses and sweeps.* This is easily observed if the reader will place himself below the line of vision of another reader and watch the eyes as they move from left to right across the page. The eye pauses are marked and the movement can be easily seen. Until Dodge and other earlier psychologists began to experiment, however, the nature of the eye movements was not known. Judd, Gray, Buswell, and others at the University of Chicago have contributed much through

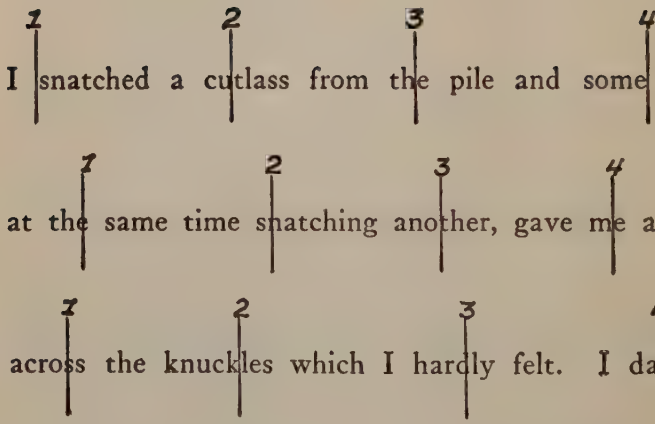
1 2 3 4
I snatched a cutlass from the pile and some one
1 2 3 4
at the same time snatching another, gave me a cut
1 2 3 4
across the knuckles which I hardly felt. I dashed

PLATE 1.—Silent reading of a good reader in the seventh grade. (From C. H. Judd's *Reading: Its Nature and Development*, Plate XXXIII, p. 72. University of Chicago.)

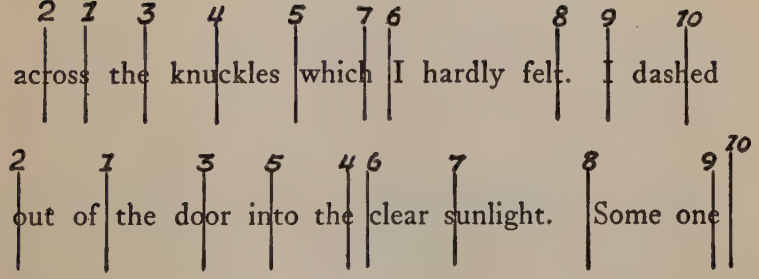
2 1 3 4 5 7 6 8 9 10
across the knuckles which I hardly felt. I dashed
2 1 3 5 4 6 7 8 9 10
out of the door into the clear sunlight. Some one

PLATE 2.—Silent reading by a poor reader in the seventh grade. (From C. H. Judd's *Reading: Its Nature and Development,* Plate XXXII, p. 70. University of Chicago.)

their studies of eye movements by means of the tachistoscope. Reproductions of good and bad movements of the eyes in silent reading by readers in the seventh grade are given in Plates I and II on pages 24 and 25. The numbers above the words represent the number of eye movements in each line. When a regressive or backward movement is made the order of the numbers is broken. For instance, in Plate I, there is a regressive movement at the beginning of each line.

2. *During the pauses the eye fixates on the word or phrase.* The fixation of the eye is essential in order that perception and recognition may take place. When the eye is moving, recognition of words is impossible. It is also to be noted that the major portion of the reading time is taken up with eye pauses and that the movements of the eye are very rapid and serve only as a means of allowing progress along the printed line. Reading cannot take place during the movement of the eye.

3. *Good readers use few fixations in reading a standard line of print unless the material presents difficulties.* The habits of a good adult reader are contrasted with those of a poor reader in Plates III and IV on pages 28 and 29. Few fixations generally mean that the reader has no mechanical or interpretative difficulties in his reading. It is essential that a reader be able to pronounce words readily and that the material be familiar if the eye pauses are to be few in number and short in duration.

4. *Poor readers fixate often, retrace the words to get more accurate recognition, and are irregular in the move-*

ment of the eyes. The photographic reproduction in Plate IV brings out these facts clearly. These movements are frequent, irregular, and inaccurate. Frequent regressive movements are seen. This means that the reader is having difficulty in word recognition, in understanding the meaning, or in both.

5. *At the end of the line the eye returns to the beginning of the next line in a single return sweep.* In the case of the good reader, as observed in Plate III, these return sweeps are accurate and require no readjustment of the eye. In the case of the poor reader, the regressive movements, as seen in Plate IV, indicate that the return sweep has been inaccurate and that readjustment is necessary.

6. *Rhythmic movements are gained rapidly in the first six grades; regressive movements decrease rapidly in grades one to four.* A study of the eye movements of a child as seen in Plate I compared with those of an adult in Plate III will indicate progress in the development of rhythmic movements. Measurements taken by Judd, Gray, Buswell, and others give the data upon which this generalization is based.

7. *The effect of training to increase the span of recognition is also beneficial in improving the regularity of eye movements.* Little has been done directly to improve the rhythmical movement of the eyes, but exercises for the improvement of the span of recognition have been found effective in improving the rhythm of the perceptions. The data on the effect of specific training exercises seem to show that rapid extensive reading accompanied by training in rapid exposure

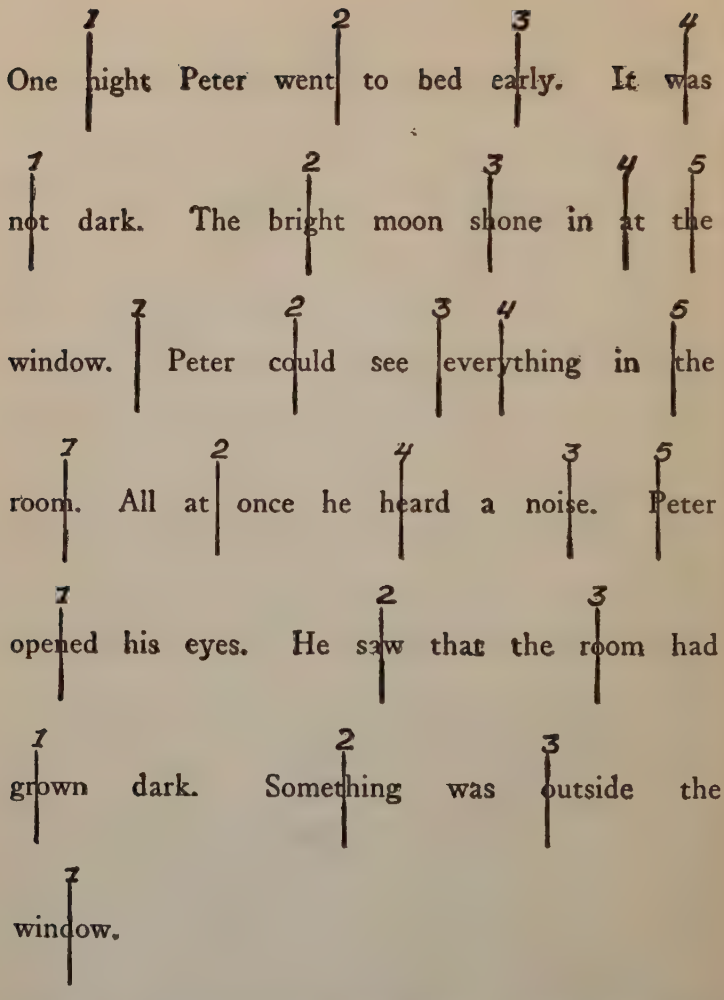
One night Peter went to bed early. It was
not dark. The bright moon shone in at the
window. Peter could see everything in the
room. All at once he heard a noise. Peter
opened his eyes. He saw that the room had
grown dark. Something was outside the
window.

PLATE 3.—Silent reading of a good reader in a college senior class. (From G. T. Buswell's *Fundamental Reading Habits: A Study of Their Development*, p. 136. University of Chicago.)

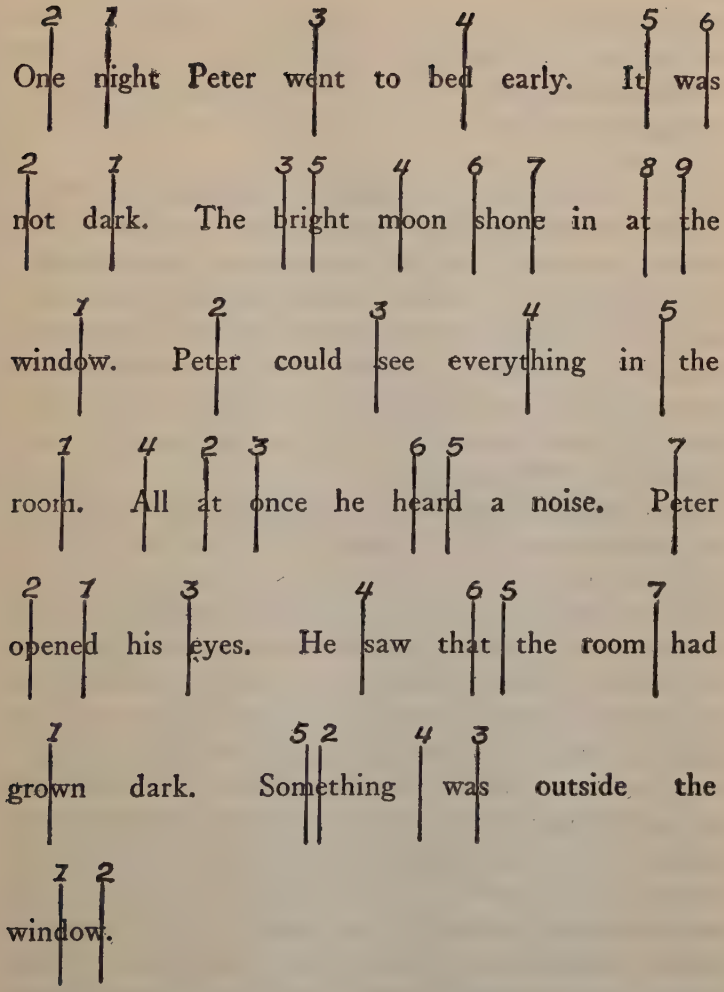
2 1 3 4 5 6
One night Peter went to bed early. It was
2 1 3 5 4 6 7 8 9
not dark. The bright moon shone in at the
1 2 3 4 5
window. Peter could see everything in the
1 4 2 3 6 5 7
room. All at once he heard a noise. Peter
2 1 3 4 6 5 7
opened his eyes. He saw that the room had
1 5 2 4 3
grown dark. Something was outside the
1 2
window.

PLATE 4.—Silent reading of a poor reader in a college senior class. (From G. T. Buswell's *Fundamental Reading Habits: A Study of Their Development*, p. 137. University of Chicago.)

exercises is effective in increasing the regularity of eye movements, decreasing regressive movements, and lessening the duration of the fixation pause as well as increasing the span of recognition.

The various findings discussed under "Eye Movements" throw additional light on the nature of the reading process in that they make clear a second phase of the reading act; that is, the work of the eye mechanism. First, the eye perceives words and phrases and recognizes meanings. Second, the eye moves from point to point in a series of regular movements, but makes longer pauses in order to recognize longer phrases and sentences.

Vocalization in reading. — A third phase of the reading process has to do with the use of the vocal cords, lips, and tongue. In oral reading, as pointed out by Brooks,[1] there are six stages in the reading process. So far we have studied the processes of perception and recognition. When perception occurs, the visual center of the brain is affected by the nerve impulse from the optic nerve. Recognition occurs when the associations between the words presented are clear and the necessary imagery, or emotional reactions, have taken place. These are the first three of the processes as analyzed by Brooks. The fourth, fifth, and sixth processes are involved in vocalization, either in oral speech or in silent, or inner speech. Impulses are sent to the motor speech centers and from them to the muscles of the tongue, lips, vocal cords, cheeks, and

[1] Brooks, F. D. *Op. cit.*

throat, and speech takes place. The studies of psychologists have been helpful in explaining the nature of both vocal and silent speech in reading. The most significant facts discovered are summarized here.

1. *The process of vocalization goes on even in silent reading in the case of almost all, if not all readers.* Huey says that in rapid silent reading the process is greatly diminished in intensity and that words are pronounced only in part and are often slurred or omitted entirely but that such inner speech is essential.[1]

Smith says,

> That inner speech plays an important part in reading and in thinking generally becomes obvious when once we turn our attention to these processes. And it is quite in accordance with expectation that it should be so. Thinking, speaking, and reading are three forms of language activity — each proceeding in terms of symbols of one kind or other, most commonly the word. When we think, we discuss things with ourselves; when we speak we discuss things with others; and when we read, we follow the discussion of someone else. In connection with the first two we use the spoken word as a symbol and in connection with the third the written word.
>
> It must be borne in mind, however, that the written word is a mere transcription of the spoken word and that the two are intimately associated. Moreover, most of us think and speak much more than we read, so that the spoken word is much more firmly imbedded than the written word. It is, therefore, not surprising that the perception of the written word should be accompanied by some degree of articulation and hearing.[2]

There is a difference of opinion on this point but the evidence does not seem conclusive against the use of inner speech. It seems reasonable, however, to argue

[1] Huey, E. B. *Op. cit.*, pp. 140–41.
[2] Smith, W. A. *Op. cit.*, p. 145.

that inner speech should be restricted in character since in the case of good readers it is less noticeable than in the case of poor readers. The more pronounced the inner speech the nearer reading approaches the oral and the less efficient it becomes.

2. *The amount of vocalization varies with individuals.* As was implied in the preceding discussion, individuals vary in the character and amount of inner speech. Certain of the earlier investigators questioned the need of it. Later investigators, using a mechanism to detect unconscious movements of the throat, have shown that certain muscles move, even in what seems absolutely silent reading, and have concluded from this that inner speech is essential. The findings of investigators, while conflicting, seem, on the whole, to suggest that inner speech is present to some extent in the reading of everyone.

3. *Lip movements accompany the silent reading of young children and also of inefficient adult readers.* The amount of lip movement in the case of young children in the first grade is attributed to mechanical difficulties in word recognition and to their efforts to associate the auditory symbol of the word with its visual symbol. The fact that the child learns to speak before he learns to read probably explains why he continues to move his lips for some time after he has learned to recognize words silently. The inefficient adult reader probably uses his lips because of early training which overemphasized oral reading and because of mechanical difficulties due to insufficient practice, lack of native ability, or other causes.

4. *It is thought by some that vocalization of a perceptible sort may be unnecessary and could be avoided by the right kind of early training.* Dodge, Secor, and Pintner support the idea that vocalizing may be nonessential. The present writer argues that the present tendency to give efficient early training with proper emphasis upon adequate rate and proper attention to silent reading will decrease considerably the amount of vocalization in the silent reading of the next generation.

5. *Vocalization may be decreased by training.* O'Brien[1] concluded from his studies that it is possible greatly to lessen inner speech in silent reading by calling the child's attention to it and getting him to attempt consciously to inhibit movements of articulation, but that practice in rapid silent reading is also essential to complete success in the removal of inner speech or in decreasing its amount.

As a summary under the heading, "Vocalization in Reading," it may be said that scientific studies indicate that one of the accompanying factors in the reading process is vocalization, either oral or silent. Inner speech is present in the case of most, if not all readers. The reader associates the sound of the word and its pronunciation with the recognition of the word. If this process could be removed, the process of reading might become much faster and possibly much more efficient. For our present purpose, it is sufficient to point out that the use of the speech organs in some form seems to be a necessary factor in the process of

[1] O'Brien, J. A. *Silent Reading*, pp. 123–25. Macmillan, 1921.

reading and that oral speech, silent speech, and silent thinking are closely related to the process of reading.

Rate of reading. — The rate of recognition of words and sentences is one of the phases of the reading process which has been much studied. Why people read fast or slow is a practical problem; and an understanding of it is necessary to the teacher. The most important findings of scientific investigators are brought out in the following summary:

1. *Rate of recognition is an important factor in reading since it determines the amount of reading an individual can do in a given time.* This principle can be demonstrated by simple arithmetic. Given 5000 words to read and a rate per minute of 250 words, if no interruptions occur and if no especial difficulties are encountered, the reader can cover the material in twenty minutes. Decrease the rate to 100 words per minute and the amount of the time needed would be at least 50 minutes. However, such a situation as this would not work out in this exact mathematical relationship because the individual who reads at 100 words per minute ordinarily would be far less efficient in comprehension than the one who reads 250 words per minute, and the time given to the reading would not produce results in proportion to the relation between the rates.

2. *Rate varies greatly among individuals and varies with the same individual reading material for different purposes.* Not only do individuals differ in reading rate but as Judd and Buswell[1] have shown, the read-

[1] Judd, C. H., and Buswell, G. T. *Silent Reading: A Study of Various Types.* University of Chicago, 1922.

ing of the same reader on different types of material varies considerably. Different children in the same class vary in rates of reading to such an extent that some children in a class read from three to eight times faster than others. Such differences are due to original nature and to training. The difference in the rate of reading of the same individual on different types of material may be explained by the difficulty of the material due to its vocabulary, organization, and thought content. Such differences in rate are very significant to the teacher.

3. *Rate of reading is closely correlated with comprehension in the case of most readers.* Good readers are usually fast readers and poor readers are usually slow. There is great variation among children in different schools, however, as pointed out by Gray.[1] The earlier data seemed to indicate a positive relationship between these two factors in reading. Later investigations show the need of caution in the development of speed because it is probably true that rate of speed varies according to the difficulty of the material, the purpose of reading, and the measure of comprehension used in the tests by which the relationship is measured.[2] The relationship between speed and comprehension is more marked in the case of children using the normal rate than among adults.

4. *Emphasis upon comprehension decreases the rate of reading.* This fact has been noted by several investigators. It is well known to the mature adult

[1] Gray, W. S. *Op. cit.*, p. 131.
[2] *Ibid*, p. 131.

reader who has examined his own processes. The presence of strange ideas in the material, of difficult words, or of an effort to supplement and interpret the thought, causes a slowing down of the reading process. Rate of reading difficult prose in which attention to comprehension must be given is much slower than the rate of reading easy narrative.

5. *Difficult material is read less rapidly than easy material.* This follows as a corollary of the preceding principle. It is impossible to read difficult material as rapidly as easy material because of difficulties in the thought, vocabulary, and structure. But the same material may be easy for one person and difficult for another.

6. *Rate of reading varies according to the purpose of the reader. Recognized rates are normal, rapid, careful, and skimming or scanning.* If the individual is reading a narrative for pleasure his rate of reading is generally rapid. If he is reading a factual article for mastery his rate is slower. If the reader is searching for the answer to a question, he ordinarily reads rapidly. If he is analyzing a passage his rate is slow and careful. A further discussion of these points will be found in Section III of this chapter.

7. *Rate of reading seems to develop rapidly in the lower grades and less rapidly in the middle and upper grades.* The child develops his rate of reading naturally. As soon as word recognition becomes independent, rate develops rapidly for three or four years. There is then a plateau of less rapid development in the middle and upper grades, and a second period of development in

the secondary school. This statement is made, in approximately this form, by Gray and is based upon the measurements of several thousand school children. O'Brien[1] found, however, that, under special conditions, in which children were subjected to training in speed of reading, there was a steady growth from grades two to eight. The increases in the upper grades were as marked as in the lower. O'Brien suggested that rates of reading are needlessly slow among elementary school children.

8. *Rate may be improved to a marked extent without impairing comprehension.* O'Brien showed that rate of reading can be increased to a marked extent without injuring comprehension if means of checking comprehension are constantly employed. He used exercises to decrease vocalization, short exposure exercises, and exercises in rapid reading of longer selections to bring about improvement. Rate was improved 31 per cent during a two-month period, while comprehension was changed but slightly for the better in quality but greatly increased in amount of material comprehended. It is probable that untrained readers tend to read too slowly for effective work.

9. *A large amount of extensive reading is effective in developing a rapid rate of reading.* The constant practice of reading naturally tends to increase the ease and rapidity of reading. The child must *read to learn* after he *learns to read.* If reading is *learned* but not *practiced* extensively, rapid reading cannot take place. Practice makes perfect here as elsewhere. Extensive

[1] *Op. cit.*, p. 201.

reading is necessary in any program of training to improve rate of reading.

10. *Rate of reading is improved also by the use of short-exposure exercises and drills in rapid reading.* The value of short-exposure exercises has been upheld by numerous investigators, among them Gray, O'Brien, and others. It has recently been challenged by Gates,[1] however. He thinks that the transfer of training from short-exposure exercises to the reading of connected material in paragraphs may be doubted and cites evidence to prove his point. The value of rapidly reading connected material in the textbook or elsewhere under controlled conditions, however, has not been challenged. Speaking from the theoretical point of view, it would seem that the natural situation for the development of rate would be in connection with the reading of related material in its natural setting; namely, on pages of regular form, rather than on flash-card strips; but the evidence is not sufficient to be decisive.

11. *Excessive lip movement is found in the case of those who read slowly.* Excessive lip movement, as was previously pointed out, generally indicates a preponderance of emphasis upon word recognition. It is either a cause of slow rate, or it is a sign of conditions which cause slow rate. It means that the individual is too much concerned with the pronunciation of words.

The preceding discussion of "Rate of Reading" stresses only the most significant points in regard to

[1] Gates, A. I. "Functions of Flash-Card Exercises in Reading." *Teachers College Record*, March, 1925.

the subject. The most outstanding fact to note is that the possession of an adequate rate is essential to efficient reading and that rate of reading is subject to improvement through training. The individual needs not only a good rate, but rather *good rates* of reading various types of material for different purposes. In the case of most children, training is essential to establish these rates.

Comprehension. — So far in Section I, attention has been given largely to the physiological aspects of the reading process. Now, the discussion turns to a consideration of the mental phases of the reading act. As a mental process, reading is very complex; it involves association, judgment, reasoning, and retention of ideas. The degree to which an individual can reproduce ideas, answer questions, carry out directions, draw pictures, or organize and utilize the thought of the material in other ways determines his success in work with books. Fortunately these phases of comprehension may be measured; and scientific students of reading have been active in devising tests and measuring pupils. As a result of their work, much is being learned about the manner in which the printed page is interpreted and understood. The following is a summary of the most important findings in this connection:

1. *Comprehension is a far more complex matter for consideration than is rate of reading.* Various makers of tests have attempted to measure comprehension. Their success is shown by the low correlations between some of the reading tests. Comprehension is judged

by Thorndike[1] to involve most of the higher thought processes. Gray[2] states that it involves accurate recognition, anticipation of meaning, analysis, association, and judgment. The latter processes are not easily investigated. Accurate recognition can be more easily measured. Words can be checked and counted during a given period of time and under varying conditions. This makes the gathering of data much easier in the study of rate.

2. *The most important factors that effect comprehension favorably are, in the order named, high intelligence, good vocabulary, power to organize, effective rate, and power to reproduce ideas gained.* These factors were studied by Hilliard[3] and arranged in the preceding order on the basis of their intercorrelation with a comprehension test. The individual who comprehends well also possesses intelligence, word knowledge, power to organize, effective rate of recognition, and ability to reproduce — factors which are essential to adequate understanding of printed material.

3. *The amount of comprehension children possess depends also upon their training, sex, race, nationality, and the kind of school they have attended.* Good reading habits are generally formed in schools where training is superior. Girls are generally inferior to boys in comprehension tests. The children of some races are

[1] Thorndike, E. L. "Reading as Reasoning: A Study of Mistakes in Paragraph Reading," *Journal of Educational Psychology*, Vol. VIII, pp. 323–32. June, 1917.

[2] Gray, W. S. *Op. cit.*, pp. 89–91.

[3] Hilliard, G. H. "Probable Types of Difficulty Affecting Comprehension in Reading," *University of Iowa Studies in Education*, Vol. II, pp. 57–59, No. 6.

superior to others. City school children are superior to country children, and children in schools where reading material is plentiful are generally superior to those in schools where it is not. In other words, good reading attends good environment for reading and is characteristic of children who have had a proper background of experience and training.

4. *Comprehension may be greatly improved by training.* Alderman [1] found that exercises in vocabulary training are most valuable for improving the comprehension of good readers, and that exercises in selecting and organizing the central thought are most valuable to average and poor readers. His study indicates that it is important to find out what abilities are involved in comprehending the printed page and then to train each specific ability until the whole complex is improved.

5. *Great differences in comprehension are due to the nature of the material read.* The type of material easily comprehended by one reader is often hard for another. Reading ability depends upon the reader's experience with the ideas presented and upon the structure of the material which is being read, as well as upon the vocabulary in which it is written. Narrative material is generally easy to read; factual material is more difficult. This may be due merely to lack of practice in reading. It has been found, however, that readers usually make higher rate scores on tests like those of Courtis involving the reading of easy narrative material

[1] Alderman, G. H. "Improving Comprehension Ability in Silent Reading," *Report of Eleventh Conference on Educational Measurements.* Indiana University, January, 1925.

than on tests like Monroe's which require ability to read material of a mixed character. It has also been noted that abstract material is more difficult to read than concrete material. A theorem in geometry, a problem in arithmetic, a direction, or a recipe is much harder reading than a simple narrative of related events.

6. *Training comprehension should be specific rather than general.* While general comprehension is often improved by incidental causes, the best results are obtained when some particular phase of comprehension, such as vocabulary or organization, is subjected to training. This is true because we do not yet know how to improve the associative powers directly, nor how to increase the judgment, enlarge the experience, teach anticipation of meaning, or in other ways affect the ability to understand what is written or printed.

7. *Ability to comprehend grows with maturity and training.* Tests given to children in connection with surveys have shown that there is a rapid development in comprehension scores in the early grades and a steady but less rapid growth throughout the elementary school. The comprehension of the child is, however, different from that of the adult. It is less complex and, as a rule, grasps only the more obvious things. The adult more often analyzes and interprets the thought. The intelligent child is less subtle than the intelligent adult.

8. *The development of comprehension is aided by exercises in comprehension.* Teachers who train the child to read for definite purposes, to supplement

the author's thought, supply illustrations, organize the ideas gained, look up difficult words, take notes, summarize, and review, help him to develop power to comprehend. In addition, drills in reading for the main thought, finding the answers to problems, evaluating the ideas, getting new ideas, accompanied by attempts to discover weaknesses due to lack of experience and to mechanical difficulties, will rapidly improve the ability to comprehend, whereas if only a single method of developing comprehension is used, such as free reproduction, only ordinary gains in acquiring the ability will be made.

Comprehension, a fundamental necessity in all reading, as shown by the preceding review, defies a very extensive analysis. It has to do with the associative and higher thought processes. Inasmuch as these processes cannot be examined directly, we are led to indirect means to understand them. It may be said that whatever is known about how we think applies also to how we comprehend, since comprehension has to do with the interpreting of printed or written thoughts. In our examination of the nature of reading, then, we must note that this is one of the fields in which a great deal of information is still needed.

Other factors of importance in reading. — As we get away from the study of recognition and perception into the more complex mental activities involved in the reading process, we are on less satisfactory ground. However, even without scientific proof, we know that the complex factor which has been called "compre-

hension" is also accompanied by certain other factors which enter into the reading process. Among these are organization, retention, manipulation of written and printed materials, appreciation, and reproduction. These will be discussed in the order named.

1. *Organization.* Some writers regard organization as a separate factor in reading ability. Some regard it as merely a phase of the factor of comprehension. It is thought to be an analytical and synthetic process. It consists of selecting from the impressions which are gained from the printed page those impressions that are important, disregarding the unimportant, arranging the ideas so chosen according to some pattern and holding them ready for some future use. It is easily seen that this may be regarded by some as a phase of comprehension only. It seems possible, however, that it is more complex than simple understanding and that it should be considered separately and given identity as a special ability. Exercises in outlining and summarizing seem to help the reader to organize. Germane has shown that training in certain forms of outlining and summarizing are effective in giving children a mastery of the details of the material they have read.[1] Alderman has succeeded in improving reading ability by training children to select and organize the main points of the material read.[2] From the evidence so far produced it seems clear that a person may have ability

[1] Germane, C. E. "Outlining and Summarizing Compared with Rereading as Methods of Studying," *Twentieth Yearbook of the National Society for the Study of Education*, Part II, pp. 103–12.

[2] Alderman, G. H. "Improving Comprehension in Reading," *Journal of Educational Research*, January, 1926.

to comprehend and but little ability to organize. The reader may readily reproduce the ideas gained from the printed page but have no ability to use those ideas in any original way. Organizing ability ranges in complexity all the way from simple selection of the main thought to the selection of data needed to work out a problem, the arrangement of these data in an original form, and the using of them in original thinking.

2. *Retention.* Retention and remembrance are terms used to describe a factor in reading which will be generally recognized as of fundamental importance. It is possible to comprehend what one reads and then immediately forget it, or fail to retain it sufficiently well to use it either in thinking or speaking. This is illustrated in the case of the reader whose eyes run over a certain paragraph and clearly take in the words and their significance but who afterward fails to remember what the writer has said. Thorndike, Courtis, and others made provision for eliminating the factor of weak remembrance in their tests by having the child read the paragraphs more than once, if necessary. The reason for doing this is that ordinarily, in tests of reading, memory has been so severely taxed that failure to answer questions on the reading has been due quite as often to failure of memory as to actual lack of comprehension of the ideas presented. On the other hand, memory of words may take place without actual understanding of ideas, and it is well that the later tests of comprehension have emphasized memory less and comprehension more.

However, memory is an exceedingly important factor in reading. Even in those tests in which the child may reread, if he wishes, a certain type of memory is necessary. This is often spoken of as immediate memory. Some students are notable for their power to remember things which have happened recently and then to forget them very soon afterward. Others have a hard time to fix facts in memory but seem to have a high degree of retentive power once the facts are fixed. The latter is called delayed memory. Every reader needs both types of memory. Certain kinds of facts are needed only for a short time; they should be clearly comprehended and then forgotten. To retain them for temporary use only is relatively an easy matter. Other facts must be remembered permanently. Immediate memory must be good if the reader is to do any reading at all. Delayed memory, or permanent memory, must be efficient if there is to be any enduring effects from the reading.

Memory is sometimes described, in another way, as verbal or ideational memory. Some people seem to have a special power to reproduce words as they are heard or read; others have a high degree of ability to remember ideas but little power to remember the words in which these ideas are expressed, or, at least, the exact order of those words. In reading, both types of memory are desirable but for different purposes. In silent reading the memory of ideas rather than words is more emphasized. As a matter of fact, without a good memory for ideas, little good would follow reading of any sort.

Memory, as used in reading, must be discriminative. The reader must know what to forget as well as what to remember. If he cannot discriminate, his mind soon becomes a jumble of undigested and unusable material. Ability to forget the nonessential is, perhaps, as important as ability to remember the essential ideas.

Good memory is aided by interest, clear original registration, frequent recalls with good attention, distributed practice, and a determination to remember. In order to teach reading most effectively, these factors must be taken into consideration and improved.

The writer has shown that ability to remember ideas long after a single reading, is very slight unless some pains have been taken to motivate the reading.[1] Pintner, Bird, Beauchamp, and Germane show that retention is greatly aided by direction and motivation.

3. *Manipulation.* Recently in educational writings much stress has been laid upon the importance of developing ability to use books of reference, book indexes, reader's guides, library indexes, and other materials of reading. Discussion of this ability has been included in the present work under the general head of "Use of Books." The writer has used the term *manipulation* to describe it. The term includes knowledge of reference books, indexes, etc., and skill in using these materials in the search for knowledge. Such ability is greatly needed in work with books and, to a lesser degree, in recreatory reading. A discussion of this important factor is included in Chapter VII.

[1] Yoakam, G. A. "The Effect of a Single Reading," *Twentieth Yearbook of the National Society for the Study of Education,* Part II, pp. 90–102.

4. *Appreciation.* By some writers, appreciation is regarded as a phase of comprehension in reading. C. T. Gray says that there are three types of comprehension in reading: intellectual, expressional, and appreciational.[1] Appreciation seems to have as its components comprehension of the author's thought plus ability to note the beauties of thought, style, and diction, and ability to react emotionally to the ideas presented. Appreciation may be said, then, to have two principal aspects, the intellectual and the emotional. Some appreciations are best realized by the individual alone; some require group coöperation. Some appreciations have to do with form; some with thought; some are aesthetic; others are more or less commonplace and practical. The art of developing appreciation in reading is but imperfectly known by teachers in general. The ability is more subjective and less easy to measure than any other of the abilities which make up this complex act.

5. *Reproduction.* A factor which has received more attention from teachers in the past than perhaps any other, except ability to pronounce words, is reproduction. This ability includes, of course, the power to articulate, enunciate, and pronounce the words printed on the page, and to express them effectively in sentences by proper accenting, sounding, phrasing, and other mechanics of oral expression. Exercises in reproducing thought in some form, usually free reproduction, are still much used as a method of testing the results of silent reading, but their value as a complete test of

[1] Gray, C. T. *Deficiencies in Reading Ability*, pp. 239–42. Heath, 1922.

comprehension is now much doubted. It seems more proper to regard oral reproduction of the words of the printed page as largely a language exercise, rather than a reading exercise, as such. Effective reproduction has its value as a means of instructing and entertaining others, but it should be accompanied by other methods of testing the effect of silent reading. Action, following directions, completion of incomplete statements, drawing, and other forms of exercises are now being used to a large extent to test comprehension in reading. Reproduction is coming to be regarded as only one type of possible response to the ideas expressed on the printed page.

The discussion of "Other Factors of Importance in Reading" has briefly reviewed the results of the analytical and experimental study of the reading process. It has been shown that reading is the process of interpreting printed language. In this process both the eye and speech mechanism, as well as the brain areas controlling these mechanisms, are used. As to the nature of the higher mental processes involved in reading, existing information is gained to a large extent from introspective study. The processes of perception and recognition of the printed word, eye movements, vocalization, rate of reading, certain phases of comprehension and retention, have yielded more satisfactorily to scientific study; and a large number of more or less proved principles are available. Organization as a factor in reading has been studied scientifically but not so thoroughly as the other factors previously mentioned. In-

telligent manipulation of books and other reading materials is now receiving much attention as an ability of much importance in successful reading. Appreciation is a factor not thoroughly understood and difficult to study.

Summary of Section I. — A review of the known facts in regard to the process of reading emphasizes its complexity, but gives promise of an increasing understanding of it. It may be attacked as a complex made up of a series of specific abilities. These abilities may be tentatively enumerated as recognition, comprehension, organization, retention, appreciation, reproduction, and skill in manipulation of books and other materials. Each of these abilities is complex and must be further analyzed into minor abilities of more or less definite character. The most difficult processes to understand are those which involve to a large extent the higher thought processes — recognition, comprehension, organization, retention, appreciation, and reproduction. The more objective processes — eye movements, vocalization, manipulation of materials, and rate of reading are easier to study and easier to understand. While a better understanding of all processes involved in reading is now possible, it is in the realm of the objective factors last mentioned that the greatest progress has been made.

II

FUNCTIONAL ANALYSIS OF READING

Another phase of the recent study of reading has been the tendency to consider its use in life outside the

school in order to determine what kinds of reading should be taught in school. The technique of such study is different from that of the laboratory studies reviewed in the preceding section. The analysis of uses of reading in life is as necessary, however, as analysis of the process itself. It is vital for teachers and school administrators to know for what purposes reading is used by adults in life outside the school and by children both inside and outside the school. Such information aids greatly in the determination of what shall go into the course of study in reading.

General analysis of uses of reading. — A general analysis of the uses of reading in life results in a division of reading into three types: (1) reading for information, (2) reading for pleasure, and (3) reading for practice, *i.e.*, for improvement of the process itself. Such an analysis gives only the major uses of reading, but it has been used for some years by writers of books on the teaching of reading. It is customary to make a general analysis on this basis somewhat as follows:

Oral Reading	*Silent Reading*
1. For information	1. For information
2. For pleasure	2. For pleasure
3. For practice [1]	3. For practice

The most complete analysis of reading from this point of view has been made by Horn and McBroom.[2] They term reading for information *the work type* and reading for pleasure *the recreatory type*. Oral and silent

[1] This item the writer adds from his own personal analysis.
[2] Horn, E., and McBroom, Maude. *Op. cit.*

reading are analyzed into (1) and (2) in the above outline but (3) is not included in their analysis. These writers further analyze the two types of reading into sub-types and give suggestions for developing the abilities involved in each.

Detailed analysis of the uses of reading. — While it is well to know that there are two main uses of reading in life: namely, for information and for pleasure; and possibly a third form — that is, reading to improve one's efficiency with the tool itself — it is not enough to be content with this general analysis. Several writers have added a detailed study of these general types.

Gray secured an analysis of the uses of reading in preparing high school assignments.[1] He asked the teachers of the University of Chicago High School to name the various ways in which reading is used in the preparation of lessons. The result was a list of twenty-nine uses of reading in this particular situation. This list is included in a composite list presented in Table I on pages 54–56.

Sterling A. Leonard later presented a general analysis of the uses of silent reading of both the work and recreatory types in the *Twenty-fourth Yearbook of the National Society for the Study of Education*.[2] In this chapter of the *Yearbook* it is suggested that silent reading is carried on for the purposes of securing "general information and civic enlightenment, to attain

[1] Gray, W. S. "The Relation between Study and Reading," *Proceedings of the National Educational Association* (1919), Vol. LVII, pp. 580–86.

[2] Part I, pp. 4–8.

greater vocational efficiency, to extend experience, and to secure pleasure during leisure hours."[1]

Uhl discusses the social worth of reading in a chapter in his book on *Materials of Reading*[2] and sets down criteria for judging whether or not reading has social value. He then lists the forms of reading which are of social worth and in Table XXXVII of the same chapter gives criteria for judging the different forms of reading. The forms of reading listed in his table are included in the composite list of uses of reading in Table I on pages 54–56, although not in the identical form in which they are listed by Uhl.

In Table I may be found a composite list of the uses of silent reading of both the work and the recreatory types as these have been so far determined. These uses are compiled from the analyses of the foregoing writers and certain uses not mentioned by them are supplied by the writer. The descriptions are abbreviated and sometimes changed in form in order to make them fit into the table. In this table, indication of the relative importance of these uses by adults and children is not attempted. Such a list serves to bring out clearly the detailed uses of reading as a tool subject.

Further analyses of the uses of reading, now under way, will classify these uses as to frequency of occurrence and as to relative importance. When these classifications are known, the relative emphasis to be placed on various kinds of reading in school may be much more precisely determined. At present the specific uses to be made of skill in reading are largely ignored.

[1] *Ibid.*, p. 4.

[2] Uhl, W. L. *The Materials of Reading*, Chapter VII, Silver, 1924.

Table I

THE PURPOSES FOR WHICH READING IS USED — A COMPOSITE DETAILED LIST OF PURPOSES IN READING AS LISTED IN FOUR STUDIES

Silent Reading — Work Type PURPOSE	*Gray*	*Horn & McBroom*	*Uhl*	*Yoakam*
1. To acquire more effective modes of expression	x			
2. To reproduce what has been read	x			
3. To determine the main outline of a story or article	x		x	
4. To enlarge one's vocabulary	x		x	
5. To determine central ideas or fundamental principles	x			
6. To visualize described details	x		x	x
7. To determine and organize the principal parts and supporting details in topic, article, or book	x			
8. To extend the range of one's information by quantitative reading	x	x		
9. To acquire more effective modes of thinking or reasoning	x			
10. To master sentence structure, grammatical forms, etc.	x			
11. To obtain information for the purpose of making reports or asking intelligent questions	x	x	x	
12. To analyze the argument of an address or article into essential parts	x			
13. To increase rate	x		x	x
14. To find collateral and illustrative materials	x			
15. To follow directions — experiment, recipe, etc.	x	x	x	x
16. To determine the relative importance of different facts	x		x	
17. To answer problems or questions	x	x		

TABLE I (*Continued*)

Silent Reading — Work Type PURPOSE	*Gray*	*Horn & McBroom*	*Uhl*	*Yoakam*
18. To draw valid conclusions	x			
19. To review material	x		x	
20. To appreciate the significance of each word used in concisely expressed statements or principles	x			
21. To gain a clear comprehension of essential conditions of problems to be solved	x			
22. To reproduce in another language	x			
23. To discover new problems	x	x	x	
24. To determine the basis of statements	x		x	
25. To determine the validity of statements	x	x	x	
26. To discover the significance of fundamental laws or conditions by correctly interpreting descriptions of their applications	x			
27. To master a particular subject vocabulary	x			
28. To find one's way about — signs, road guides, maps, etc.	x			
29. To find or verify spellings, meanings, etc.	x			
30. To decide how to act in new circumstances	x			
31. To verify a fact or an opinion		x		
32. To be able to act on what one reads		x		
33. To form the basis for a judgment		x		
34. To understand a situation		x		
35. To find out whether material bears on a certain subject		x	x	
36. To evaluate material		x		
37. To outline or take notes				x
38. To summarize orally				x
39. To make a written summary				x
40. To reproduce verbatim				x
41. To browse — just look around				x
42. To check correctness of copy-proof reading				x
43. To correct grammatical errors				x
44. To judge appropriateness of form				x

TABLE I (*Continued*)

Silent Reading — Work Type PURPOSE	*Gray*	*Horn & McBroom*	*Uhl*	*Yoakam*
45. To judge appropriateness of title, marginal headings, etc.	x			
46. To understand assignments and directions in both school and life	x			
47. To increase interest in a given field of study	x			
Silent Reading — Recreatory Type				
1. To enjoy relaxation	x	x		
2. To enjoy a laugh	x			x
3. To obtain emotional reaction—sob reading	x			x
4. To get spiritual guidance				x
5. To satisfy different moods through vicarious experience		x		
6. To be conversant with particular books to be discussed		x		
7. To be generally intelligent on literary references in reading or speaking		x		
8. To widen generally one's interests and ideas		x		
9. To idle time away		x		
10. To get atmosphere for a play or musicale				x
11. To browse — just looking around				x
12. To enjoy or interpret pictures — leafing through magazines				x
13. To satisfy curiosity about peoples and things	x			x
14. To get a thrill — sudden changes and sharp contrasts	x			
15. To forget — to get away from real life	x			x
16. To get musical effects — for words				x
17. To relive common, everyday experiences	x			
18. To enjoy sensory imagery	x			
19. To keep up with the times — current events, etc.	x			x

A study of the uses of recreatory reading. — A student[1] of the writer in a recent study of the uses of recreatory reading among a group of adults — mostly student-teachers and teachers, but including also representatives from several other occupations and professions — succeeded in listing through interview and questionnaire methods, ten main purposes for the recreatory type of reading and some ninety-nine specific variations of each of the main types. Her study shows that most people read either to relax or to satisfy curiosity. Occupational differences are, however, marked. Some people read from a sense of duty, but most readers in their leisure reading read for other purposes. The ten purposes are given below in order of rank:

1. To satisfy curiosity.
2. For relaxation.
3. For emotional satisfaction and stimulation.
4. For culture.
5. For vicarious experience.
6. For vivid description.
7. To get a background or atmosphere.
8. To idle away time.
9. From a sense of duty.
10. Because of the physical attractiveness of the book.

Under each of these headings from five to ten specific examples of these types were given. This study also shows the per cent of people of various occupations who read for each of the main purposes. Table IA (page 58) seems to show that different occupational groups make markedly different uses of recreatory

[1] Montgomery, Wilda Lea. *The Uses of Recreatory Reading.* Unpublished M.A. thesis, University of Pittsburgh, June, 1927.

Table I A[1]

PER CENT OF EACH OCCUPATIONAL GROUP MENTIONING EACH USE OF RECREATORY READING

	Physicians	Ministers	Nurses	Maids	Artisans	Housewives	Stenographers	Teachers	Musicians	Professional men and women	Librarians	Students	Total	Median
Number of replies to questionnaire	10	8	5	10	14	27	12	46	14	18	12	234	410	
Relaxation	30	33	41	22	33	25	22	24	32	28	14	19	22	25
Satisfaction of curiosities	23	11	16.5	17	22	24	29	23	21	20	25	30	28	23
Vivid description	17	16	0	4	16	13	14	13	20	6	11	4	71	13
Physical attractiveness of books	0	0	0	0	0	0	0	2	0	9	0	2	9	0
Emotional satisfaction and stimulation	5	5	13	8	4	9	6	8	6	8	8	10	11	8
Culture	11	11	13	55	13	11	5	94	6	8	10	14	10	8
Vicarious experience	8	5	4	13.5	10	8	12	8	81	11	11	7	8	8
To get background or atmosphere	6	13.5	12.5	3	0	8	8	12	6	9	19	5	7	8
To idle away time	0	0	0	13.5	2	16	4	14	9	41	0	5	4	4
From sense of duty	0	55	0	13.5	0	4	0	1	0	5	2	4	2	2

[1] Based on report of W. L. Montgomery.

reading. Some of these differences are unexplainable on the basis of the data presented in this table.

Mrs. Montgomery's analysis has carried the composite study made by the writer, as given in Table I, a step farther in the recreatory reading phases and classified the different uses of reading more thoroughly. It is suggested that such an analysis gives some idea of the types of recreatory reading which make the most difference in life and perhaps indicates in a rough way the relative emphasis to be placed on each type.

Discussion of the fundamental uses of reading in life. — At this point it seems advisable to discuss at more length in a practical way the importance of the three great fundamental uses of reading in life although a complete treatment of the specific sub-types is impossible.

1. *Reading for information or work reading.* In recent years a distinction has been made between reading for information, or work, and reading for recreation, or play. Reading for information is now receiving far more attention than formerly. This type of reading has been called *reading of the work type*, *assimilative reading*, *analytical reading*, and *study*. It is much employed by the child in school and by certain adults in life outside the school. Very few people nowadays fail at some time to use books or magazines for this purpose; and since, when they do so, they are *working* with books, the ability to use them rapidly and effectively is a most important matter. Yet few adults are well equipped to read books for work purposes effec-

tively because the schools have seriously neglected to train them as children in the fundamental skills of reading and in the use of these particular types of books.

Types of materials involved in work-type or informational reading are in some respects the same as those used in reading for pleasure, but the attitude of the reader toward them is different. Among the materials used for work-type reading are history, geography, science, mathematics, biography, travel, economics, politics, philosophy, and certain discussions of vocational subjects, as well as general books of reference, including dictionaries, encyclopedias, etc.

The skills involved in the use of books for informational purposes are many. In the first place the reader must be efficient in the mechanics of the reading process itself. He must read with efficient speed, comprehension, organization, and retention. In addition he must have command of a special set of knowledges and skills in the use of books and of the library such as are suggested in Chapter VII. These special types of informations and skills are necessary in successful study that goes beyond the memorizing of the pages of a single textbook and should be taught as a part of the course of study in reading. They must not be neglected if success is to follow the student's efforts, for it is particularly in this type of reading, commonly called reading for information, that skill in silent reading becomes most important. In reading for pleasure, technical skills of this sort are not so crucial, since interest carries the reader along.

2. *Reading for pleasure or recreatory reading.* This type of reading is more common in the present day than at any time in the history of the world, unless there has been a recent falling off due to the moving picture and the radio. However, reading for pleasure, in America, at least, is a widespread practice. Illiteracy has been reduced to a large extent. In certain states, for instance Iowa and Nebraska, less than two per cent of the adult population is unable to read and write. Compulsory education has become almost universal in America. Aside from the recently arrived immigrant, practically all Americans of white parentage have contact with reading in some form. The printing press has multiplied books, magazines, and newspapers to such an extent that anyone who wishes may find material. The great popularity and widespread presence of the motion picture makes it impossible, too, for the ordinary individual to enjoy himself in the usual manner without the employment of silent reading. And even though the motion picture may have encroached upon the amount of leisure reading of the average American, it still remains true that thousands in their daily lives find reading silently a very important amusement. It is therefore imperative that the schools should develop to a high degree of efficiency the ability to read silently for pleasure.

This type of reading involves many types of reading material. A brief analysis reveals all the great literary types — drama, poetry, fiction, history, biography, travel, science, art, religion, and philosophy. Current literature and printed matter in magazine form abounds.

Of the latter the present age uses an unbelievable quantity. A recent writer [1] pointed out the wealth of reading matter which may be purchased for the price of twenty-five cents per week. This would include a weekly popular magazine, a newspaper, and a weekly review, furnishing the family the equivalent of one hundred books per year in the popular weekly plus the unestimated pages of the weekly review, and the material in a weekly or daily paper, which would probably equal a hundred books more. In addition to this material, practically every town of any size has a free public library in which the reader may find all types of material ranging from the latest fiction to books on the most abstruse subjects. One must admit, however, that the proportion of the latter is often small and not much used. Thus reading for pleasure occupies a large place in American family life. The types of material and the opportunities for getting it are abundant and numerous.

Current events and modern fiction are very frequently neglected in the school for a type of literature ill-suited to children and for almost exclusive attention to the study of the technical aspects of classical poetry, the novel, and serious drama. It would seem very essential that teachers of reading make a larger use of recent and current literature in their teaching than has been the custom, because of the marked tendency in adult life to read this material and because of the high degree of interest recent and current happenings have for the average person.

[1] Parker, C. S. *Types of Elementary Teaching and Learning*, Ginn, 1923, pp. 334–38.

3. *Reading to gain skill in the use of the tool itself.* In the case of a few individuals who become conscious of their deficiencies in reading, reading may be practiced for the purpose of gaining skill in the use of the tool itself. In the school which lays emphasis upon silent reading many of the exercises will have for their purpose the development of speed, comprehension, organization, or retention. The individual student may try purposefully to increase his skill in reading by skimming and rapid reading exercises. Such exercises as are cited by Stone[1] and called "training exercises," have for their purpose the development of certain silent reading skills. The child in a class which is being trained with these exercises may be made conscious of the desirability of reading with efficient rate, with adequate comprehension, and for the development of ability to organize and retain; and inasmuch as he is conscious of these purposes, he may be said to be reading to gain skill in the use of the tool itself. In oral reading, this purpose is quite often present when pupils are practicing for the purpose of making more perfect their enunciation, pronunciation, tone, rate, or some other factor. Doubtless with younger children this purpose in reading will and should be incidental to reading for thought or appreciation.

The value of the analysis of use. — The analysis of use of reading brings out the many different functions reading performs as a tool used in school and in life. Functional analysis is not complete and doubtless needs further extension and revision but it is effective in re-

[1] Stone, C. R. *Silent and Oral Reading*, Chapter VIII. Houghton, 1922.

vealing what a tremendously complex activity reading is. It seems obvious that since reading is used in life in so many ways it cannot be taught in school as a simple mechanical process but that definite instruction should be given in its use for many different purposes.

III

FUNCTIONAL ANALYSIS OF THE RATE OF READING

As was noted in the first section of this chapter, rate of reading is an important aspect of the reading process. The nature of rate was discussed in Section I. In this section a different aspect of rate is discussed; namely, the different uses of rate of reading by experienced readers. If reading is thought of as a tool, then the rate at which the tool normally operates may be considered an important aspect of reading, and the conditions which cause fluctuations in rate may be considered significant.

Types of reading based on rate. — There are at least four well recognized types of reading when considered according to rate at which words are recognized: (1) scanning or skimming; (2) rapid reading; (3) normal reading; and (4) careful reading, which includes assimilative and analytical reading. These four types are probably only modal points in rate of reading.

1. *Skimming.* Skimming is a very rapid rate of reading in which the reader merely passes his eye rapidly over the printed material to find some particular reference or to get a general idea of what the passage, page, or series of pages contains. It is possible to skim

at very rapid rates. Eight hundred to a thousand words per minute may be covered in this manner by a skilled reader. References may be found at this rate without error and a general idea of the contents of a passage or article obtained. Skimming is a useful skill and should be taught to children after they have mastered the mechanics of reading. They should, however, be taught to use it for specific purposes. A more detailed analysis of the uses of skimming for certain study purposes is given in Chapter V.

2. *Rapid reading.* Rapid reading is a type used with familiar or easy material. There are certain types of material that are worth only one single rapid reading of this sort. The rapid rate is used by readers who are reading a novel or story for pleasure. It may be used in study when the reader is merely comparing one passage with another or seeking to find out whether material contains new ideas. This type is commonly used in reading the newspaper, current magazines, and lighter fiction, or informational books when the object is to get the general trend of the thought and not to master the details. It may be used consciously as a tool in certain types of study. Children should be taught to be rapid readers in earlier grades so that the habit may become permanent.

3. *Normal rate.* The normal rate of reading is the habitual rate at which a reader proceeds. It is determined by his mechanical efficiency, by the material he is reading, and by his purposes in reading. Normal rates are doubtless far too low for adults of the present generation because of the overemphasis on mechanics

in their early training. Normal rate is used for most types of recreatory reading and for factual reading of ordinary difficulty.

4. *Careful reading.* Careful reading is a type that may be consciously used when the reader is aware that the material is worthy of his close attention and that the details as well as the main points should be mastered. The rate is much slower in this type than in rapid reading or skimming, sometimes one half or one third as fast. Careful reading is used when the reader desires to weigh the significance of the material or when he is picking up the details as well as the main ideas. Difficult material slows down the rate of reading automatically and causes the process to become reflective or analytical. Careful reading is used with such types of material as are commonly met in the more important and serious magazines, in technical articles, scientific treatises, and in such factual articles as contain directions, statistical information, and the like. The child needs to be trained to use careful reading with such material as deserves "to be chewed and digested." It is equally important, however, that he be taught that not everything he reads is worthy of this deliberate and time-consuming process. The danger is not that the child may not learn to read deliberately, but rather that he will not learn to read discriminatively and to use and value different rates in reading.

The skilled reader learns to vary his speed in accordance with the nature of the material read. Easy material allows a faster pace. Difficult material slows it down. Nevertheless, the rate at which one reads can

be slowed or hastened at will; and it is possible for one to be trained so that even the rate of careful reading greatly exceeds that which was formerly used. Even adults can materially increase their efficiency in rate. Numerous data are available to prove this point. The experience of Dr. Charles Fordyce is perhaps as good as any.[1] He found that even as an adult by attention to the matter of rate and by specific practice he was able to increase the efficiency of his reading to a marked extent. The experiments of O'Brien[2] show that by group methods the rate of reading among children may be increased to an astonishing degree through training. The school should train the pupil to change his pace in accordance with the purpose for which he is reading. This will be determined by whether he is looking for a reference, trying to get the gist of the thought, remember the details, or estimate the value of the material.

While difficulty of the material affects rate, it should be understood that both rate and comprehension are automatically affected, whether the reader wishes them to be or not. But, by training, the reader may come to use the different rates of speed with much greater skill than formerly. Through such deliberate use of rate of reading he will save much time. For this reason it is important that the matter of change of pace be stressed with children.

Rate of reading may be measured. Hence it is easily ascertained whether or not the student is making

[1] Fordyce, Chas. *Proceedings of National Educational Association*, Vol. LV, pp. 818–21.

[2] *Op. cit.*

progress. Since there is a high correlation between good rate and general efficiency in reading, the teacher can obtain good results by giving attention to speed exercises in all grades, but more particularly in the early grades, as has been noted by Buswell and Judd. Progress in rate of reading may be easily shown by means of repeated tests at judicious intervals and interest in this factor may be aroused greatly through graphs and charts.

The relations of rates of reading to purposes in reading. — The relation of rates of reading to purposes of reading is more clearly shown by the graphical method in Chart I. This chart does not make a complete analysis of all the detailed purposes, but the relationship of certain purposes to rate of reading are clearly shown. The chart illustrates rate in silent reading only, since in oral reading rate is almost a predetermined factor on account of the physiological limits to rate of articulation in this kind of reading.

IV

OTHER FACTS BEARING ON THE NATURE OF READING

Periods of development in reading. — Out of the research in reading has developed the conviction that reading development is more or less periodic. The Committee on Reading of the National Society for the Study of Education, in its *Twenty-fourth Yearbook*,[1] Part I, divides instruction in reading into five periods: the period of preparation for reading; the period of

[1] pp. 21–73.

LIFE USES OF READING CLASSIFIED ACCORDING TO RATE

Skimming		*Rapid*		*Normal*		*Careful*	
WORK	RECREATORY	WORK	RECREATORY	WORK	RECREATORY	WORK	RECREATORY
To get gist of material	Looking over magazines, books, etc. to get gist of thought	To get general idea of content	Reading of familiar narrative for relaxation	To get the details of material	For relaxation	To master content including details	When important factual articles are read
To find a reference	To pick out story to read	To find specific reference	Informational matter for pleasure and relaxation	To get main thought	To keep in touch with current events	To evaluate material	To search for particular artistic effects
To locate new material	Reading pictures	To locate material	At movies	Reading new material	To know a new story	To raise questions	To judge literary or other values
To refresh memory	To review a familiar book or story	To review familiar material	Reading pictures	When material of ordinary difficulty is met	To satisfy sense of humor	To answer questions or problems	To supplement thought
To answer a question		To get information for temporary use	To reread familiar material	To solve a problem	For devotional purposes	To get directions for performing an act	For spiritual guidance
				To answer a question	To memorize	To outline	When classical material with unusual words is met
				To find a new problem		To summarize	To memorize poetry
				To locate a reference		To reproduce	
				To locate new material		To analyze thought	
				To commit to memory		To remove difficulties of thought or form	
				To supplement thought		To supplement thought	
						To assimilate thought	
						To solve a problem	

initial reading instruction; the period of rapid progress in fundamental attitudes, habits, and skills; the period of wide reading to extend and enrich experience and to cultivate important reading attitudes, habits, and tastes; and the period of refinement of specific reading attitudes, habits, and tastes. These periods are based upon the scientific evidence available in regard to the nature of the development of reading ability among children. They are not rigid classifications but they represent the development which may be expected to take place normally in, respectively, the kindergarten or early part of the first grade, in the first grade, the second and third grades, the fourth, fifth, and sixth grades, and in the junior high school and beyond. The recognition of these periods is regarded by the committee as helpful in the organization of a program in reading. The suggestions of the committee are significant because they make the teaching of reading to children in the elementary school a specific rather than a general problem; and they outline a program for the middle grades which should make the teaching of reading something other than mere thoughtless mechanical drill.

Differences between oral and silent reading. — One of the first facts to emerge out of the scientific study of reading was that silent and oral reading, while parts of the same general process, have certain marked differences which make it unadvisable to develop one at the expense of the other. Some of the marked differences are as follows:

1. Difference in the social importance of each. Silent

reading is far more useful as a tool in life than oral reading.

2. Differences in the rate of each. Silent reading is normally a much faster process than oral reading.

3. Differences in methods of teaching. In oral reading the mechanics of expression are given first consideration; in silent reading thought-getting or impressional activities are predominant. Methods which are used to develop oral reading ability are not necessarily efficacious in developing rapid thought-getting.

4. Differences in the purposes of each. Oral reading represents thought-and-pleasure-giving; silent reading, thought-and-pleasure-getting.

These differences have now been realized and very significant changes in the methods of teaching reading in the schools have resulted.

Individual differences in reading ability. — The earliest tests of reading immediately brought to light the fact that there are enormous differences in reading ability among children. Some children read five or six times as fast as others and with far greater ability in comprehension of what is read. Grades greatly overlap in reading ability; it is not uncommon to find twenty per cent of overlapping between adjacent grades. Children differ in ability with which they read and learn to read, just as they differ in every mental and physical trait. As a result of the appreciation of these individual differences it has been found that much diagnostic and remedial work is necessary when children are taught in classes if they are to progress satisfactorily. This has led to

experimental work in diagnosing weaknesses and in using remedial instruction. The work of Gray in this direction has been one of the finest contributions to the new science of education.[1]

The relation of reading to intelligence. — The relation of reading to intelligence has been made the subject of study by various investigators. In general the relationship between reading ability and general intelligence is found to be high. This may be due in part to the fact that the tests of intelligence generally used have been linguistic intelligence tests. The fact remains, however, that children of poor intelligence are low in reading ability. It seems quite likely, since reading is a language ability, that this relationship will continue to hold.

The causes of poor reading. — The causes of poor reading ability have been investigated by various students of reading. Gray has listed a great many causes of poor results in reading, among which may be cited the following:

1. Low general intelligence.
2. Excessive training in oral reading.
3. Too much phonics.
4. Not enough phonics.
5. Poor rate.
6. Lack of ability to move the eye across the page rhythmically.
7. Excessive lip movement.
8. Deficiencies in power to organize.
9. Inability to reproduce.
10. Lack of word knowledge.
11. Insufficient experience.

[1] Gray, W. S. *Remedial Cases in Reading; Their Diagnosis and Treatment.* University of Chicago Press, 1922.

As has been noted, Hilliard studied certain of these causes and selected five of them for particular experimental investigation. He found that poor comprehension in reading is usually accompanied by low intelligence, poor vocabulary, inability to organize, poor rate, and lack of power to reproduce efficiently. In general, diagnostic studies show that the causes of poor reading ability are many and that the teacher of reading must be on guard to prevent the formation of bad habits of reading among children and to remedy the deficiencies which have already appeared. This means that in general teachers of reading must be much better prepared than they are at present.

Reading as thinking. — Thorndike has emphasized that even the reading of a simple paragraph of prose and answering questions about it is really an act involving "all the features characteristic of typical reasoning."[1] Reading is not a simple matter of recognition of words and the ideas associated with them but it consists of an evaluation of those words and a selection of the correct meanings of the words in context. Comparing, judging, and drawing conclusions are involved in the simplest act of reading. The difference between reading as reasoning and other forms of thinking is to be found in the fact that the reader is using an artificial medium which presents the ideas, instead of dealing with them in other forms. The same type of ability which is included in arriving at generalizations in thinking without books also accompanies the reading process.

[1] Thorndike, E. L. *Op. cit.*, pp. 323–32.

Reading as learning. — Reading should be regarded as a form of learning. In the schools it has assumed a high place as the chief medium through which children learn. It should be thought of, however, as only one of the forms in which learning is involved. A further discussion of this point will be made in a later chapter.

SUMMARY OF THE CHAPTER

Reading, instead of being a single unitary ability rather simple in character, emerges after a half century of study as a very complex activity requiring many specific abilities — word recognition, comprehension, organization, retention, manipulation, appreciation, and reproduction. Of all these specific abilities, that of word recognition has been most thoroughly studied because it lends itself most readily to objective experimentation. The manner in which words are perceived and recognized in reading is fairly clear on its physical side. The other factors, however, involving to a large extent the most important part of reading, that is, the mental processes, yield themselves very reluctantly to experimental study. And it is as a mental process that reading becomes most significant. On the functional side, however, reading is more easily studied. It is possible to enumerate the uses of reading in life and in school and to describe the typical uses of reading according to rate. When looked at from this point of view, the act of reading takes on a large significance as a process which permits the individual to continue life-long education through the use of books; it opens up to the child an expanding world; it promises the adult

continued pleasure and profit as a means of extending his experience. Looked at in this light, it is the most important of all school arts. The teacher should no longer regard it as a problem largely mechanical in nature but rather as one involving practically all of the higher thought processes. Increased appreciation of the use of reading should lead to more specific teaching of reading for many different purposes.

SUGGESTIVE PROBLEMS

1. What are the advantages of breaking reading up into various types?

2. Can you show that it would be better, as some claim, to lay emphasis upon reading as thinking and not to attempt to analyze it into different types?

3. What is the probable cause of the lack of correlation between ability to read one type of material and ability to read another of a different character?

4. Explain why one might be a good reader of science and be a poor reader of poetry?

5. What are the probable causes of the failure of pupils to comprehend what they read?

6. Which of the analyses of reading in this chapter appears to you to give the most promising attack for the improvement of reading ability?

7. Analyze the uses of reading made by yourself in the course of a week and see how they fit into this scheme.

8. Prove or disprove that if you are taught to use reading as a tool for gaining information, the skill developed in this situation will transfer to reading for pleasure.

9. Why is more emphasis not placed upon the value of attaining knowledge in the ordinary teaching of reading?

10. Have you checked up on your personal efficiency in reading? Why not do so and try to improve your ability where it is weak?

SUPPLEMENTARY READING

1. Brooks, F. D. — *The Applied Psychology of Reading*, Chapters III–VII. Appleton, 1926.

2. Gray, W. S. — *A Summary of Investigations in Reading*. University of Chicago, 1925.

3. Huey, E. B. — *The Psychology and Pedagogy of Reading*, Chapter I. Macmillan, 1908.

4. *National Society for the Study of Education. Twenty-fourth Yearbook*, Part I, Chapters I, II, III. Public School Publishing Company, Bloomington, Illinois.

5. Smith, W. A. — *The Reading Process*, Chapters I, II, and III. Macmillan, 1922.

6. Uhl, W. L. — *The Materials of Reading*, Chapter VII. Silver, 1924.

CHAPTER III

The Nature of Study

The term "study" used in a variety of ways. — The term "study," like many other labels for general concepts, suffers in exactness of meaning from its use in daily life. Or perhaps it would be more exact to say that it takes on meanings through daily use that are not generic but derived. In common practice in the school it is applied to an activity, a subject, a place, a written production, and perhaps in other connections that have not been distinguished. In schools the activities most generally included in study are reading with intent to reproduce the pages of the textbook, memorizing the words or ideas included therein, practicing a mechanical skill such as handwriting, or working out answers to arithmetic problems and other tasks of a like nature. In life, outside the school, the term "study" is applied to a state of mind, the act of thinking, a place, a piece of written material, a painting, and doubtless to other activities, productions, and things. A certain state of mind is described as "a brown study"; verbal phrases, such as "to study a problem," "to study a hand in cards," or "to study a move in chess" are in common use. A painting or a piece of statuary is often spoken of as "a study in color" or "a study in bronze." The pastor's or the writer's workroom is his "study," etc. But perhaps the first thought that comes to the mind of

most persons in connection with the word is that it is an activity which involves the use of books. Early association in school with the study of books has given the term a significance to adults which is not easily lost. Yet study as a mental activity suffers from exactness of definition in the minds of adults, children, and teachers.

I

THE IDEAS OF CHILDREN ABOUT STUDY

An investigation of children's themes. — It is particularly important to the teacher to discover what children know about study. Such knowledge will form a point of departure for effective teaching. The writer attempted to obtain some information on this subject recently by organizing and directing an investigation of children's themes on "What I Do When I Study." [1] The result of this investigation will be reported here.

1. *Purpose of the investigation.* The purpose of this investigation was twofold: (1) to find out what children know about study; and (2) to interest them in their study processes.

2. *Method of the investigation.* Children were asked to write themes on the topic, "What I Do When I Study." These themes were collected and analyzed by members of the writer's classes, which were composed of teachers and supervisors in two school systems of Pennsylvania. Themes were collected from 1665 chil-

[1] Yoakam, G. A. "What Children Do When They Study," *University of Pittsburgh, School of Education Journal*, Vol. 1, November and January, 1925–26.

dren in grades 3A[1] to 9 inclusive in School A and from one hundred children in the seventh and eighth grades in School B. In each of these centers teachers were engaged in classwork and coöperative supervision in a course in directed study.

The teachers were instructed to tell their classes that they wished to find out what the individual members did when they studied in order to help them study better. The children were told that they were not to be marked for English on the papers written and that the grades they received on the papers would not affect their class standings. Teachers were instructed to explain as fully as was needed the nature of the theme to be written, to attempt to interest the children in their study processes, and then to leave them free to write their themes without interference or suggestion. No attempt was made to exhaust the children's knowledge of how they studied since only one theme was written by each child.

The themes in School A were analyzed partly by the classroom teachers and partly by a committee composed of two teachers [2] who went over all the material and tabulated each activity mentioned according to frequency of mention. These frequency lists were reviewed and retabulated by the writer. In School B one teacher analyzed and tabulated activities mentioned by her pupils.[3] Her material was later arranged and adapted by the writer.

[1] A as here used indicates the higher third grade.

[2] The writer is indebted to Miss Clara Menges and Miss Grace Griffith, who did this work.

[3] Miss Helen Hilliard collected and tabulated the data.

No attempt was made to have children distinguish among various kinds of study. It is believed, however, since the textbook is still so universally used, that children generally regard study as a matter of mastering the printed page. The activities listed in the present study would seem to bear out that opinion.

In classifying activities under appropriate headings, the teachers were instructed to be as careful as possible to list each activity under a heading which best described that activity as given in the words of the child. Reasonable care and accuracy were used in such classification.

3. *Results.* The results of the investigation appear in the following frequency table:

TABLE II

TOTAL NUMBER OF DIFFERENT ACTIVITIES MENTIONED IN GRADES 3A TO 9

School A

NUMBER OF PUPILS	NUMBER OF CLASSES	GRADE	TOTAL DIFFERENT ACTIVITIES
35	1	3A	10
66	2	4	19
535	16	5	52
760	23	6	49
97	3	7	43
115	5	8	17
57	2	9	19
1665	53	3A–9	82 [1]

[1] Including irrelevant items.

Many of these activities are mentioned by so small a number of pupils that they seem to the writer to be the result of incidental learning rather than of instruction. A considerable number of the total items were irrelevant.

Table III gives the activities mentioned in each class in terms of per cent of pupils mentioning each activity. All activities which were mentioned by less than one per cent of the 1665 pupils have been eliminated.

It will be noted that the first nine items in Table III furnish the majority of activities mentioned by pupils in all grades. In grade six, with 760 pupils, all items are mentioned by one per cent or more of the pupils. It is quite unlikely that had there been an equal number of children in each grade there would have been many additional items. It is believed that the above table gives a fair representation of what children think they know about study.

There may be some doubt about the exact meanings of the terminology used in the table. The writer has interpreted the raw data to a certain extent in the classification. For instance "reading the lesson over" may mean reading it once, twice, or more times. When rereading is specifically mentioned as a method of study, the number of rereadings is not given. Concentration, or paying attention, is specifically mentioned by thirteen per cent of the pupils. Doubtless a much larger per cent were aware of its necessity. "Ask questions" is taken to indicate the practice of asking questions of the material studied rather than of the teacher. "Answer questions" implied that the assignment has been

Table III

ACTIVITIES IN STUDY MENTIONED BY 1665 CHILDREN IN GRADES 3A TO 9

GRADE	3A	4	5	6	7	8	9	PER CENT OF TOTAL
NUMBER OF PUPILS	35	66	535	760	97	115	57	
1. Read lesson over	11	6	31	23	14	49	61	25
2. Reread the lesson	..	1	15	20	35	34	44	17
3. Look up words in dictionary	3	1	12	23	14	20	23	15
4. Concentrate — pay attention	4	1	7	24	10	22	7	18
5. Try to get thought	..	1	10	14	16	17	3	11
6. Answer questions	31	3	6	5	30	22	2	8
7. Think about the lesson	46	5	..	16	5	..	..	8
8. Find the important facts	4	12	..	8	16	35	21	8
9. Ask questions	..	3	6	7	1	20	19	6
10. Look up references	..	6	4	8	2	..	..	5
11. Recite — say it over	..	3	6	5	2	13	..	5
12. Use notebook	..	..	5	7	7	..	..	5
13. Close lips	4	1	..	9	4	..	..	4
14. Outline lesson	..	1	1	3	2	2	16	2
15. Review previous lesson	..	..	..	3	..	19	..	2
16. Study maps	..	..	3	2	1	..	..	2
17. Follow directions	..	..	1	3	..	..	..	2
18. Use index	..	..	1	1	4	..	..	2
19. Imagine or visualize	..	..	5	2	2	..	..	2
20. Recall past experience	..	..	1	3	..	..	..	2
21. Play — do nothing	..	..	1	2	7	..	..	1
22. Persevere until through	..	..	1	2	..	..	..	1
23. Sit up tall	..	..	1	1	1	..	..	1

given in the form of questions and problems. Again, items 4 and 22 may be regarded as conditions of study as well as acts of study; it is clear that "concentrating" and "persevering" may be acts involved in study if not methods of study as such.

Table III does not reveal all the possible methods applied to textbook study but it gives a surprisingly intelligent analysis of the study act. It suggests that the investigator might very well accept this analysis as a guide in improving study habits and that it will indicate to him relative emphasis to be given different activities in future instruction in how to study.

Table IV presents the activities mentioned by one hundred pupils in School B, in Grades 7A and 8B. The figures in the table represent per cents of pupils mentioning each item as well as number of pupils mentioning the item.

The above table shows that these children have a larger number of reading skills in mind than the children in School A. This may have been due to the instruction which was going on among the teachers during the time the data were collected. There are activities mentioned here that do not appear in Table III at all. The teacher of this group was well founded in knowledge of study practices and doubtless had given more instruction to the group than is customary. It is noticeable, however, that only six activities are mentioned by more than twenty-five per cent of the pupils.

4. *Samples of children's themes.* The themes of the children show varying degreees of skill in self-analysis.

TABLE IV

ACTIVITIES IN STUDY MENTIONED BY 100 PUPILS IN GRADES 7 A AND 8 B

ACTIVITY	PER CENT MENTIONING
1. Read the lesson over	99
2. Read each topic separately until understood	73
3. Reread after studying each topic separately	39
4. Read lesson once, pick out most important facts for study	32
5. First scan a lesson rapidly to get the trend of thought	17
6. Read interesting topic once only	12
7. Seldom read more than twice	17
8. Reread difficult lesson more than twice	17
9. Look up words in the dictionary	34
10. Use encyclopedia for reference	34
11. Try to fix mental images	22
12. Have somebody question after study	18
13. Use outline in studying long assignments	17
14. Summarize by using text questions or own questions	13
15. Reproduce lesson in own words	13
16. Write down important facts	12
17. Try to visualize a narrative or poem	12
18. Use line by line method in memorizing	9
19. Attempt to make lesson interesting to listener	6
20. Concentrate with difficulty	5
21. Use maps	1
22. Practice material for oral reproduction by oral methods	1

Several samples, selected from the one hundred themes of pupils in School B, grades 7A and 8B, are given here verbatim.

What I Do When I Study

When I study I am taking in a greater knowledge and so advancing into the grown-up world with useful knowledge. When I study a topic or reading, I pick out the main ideas and try to say them the best I can. When I have learned them I pick out the next important ideas until I get a good topic. When I say it, it increases my knowledge thoughts and learning, which are things a person cannot do without.

What I Do When I Study

When I study a reading lesson I first read the story I am studying and then divide it into different parts. If there are any sub-topics, I put them down also. I then read all of the first part, and when I have finished I close my book, and tell the story of the first part to myself. The rest of the topics are disposed of in the same manner. After I have read and told all of the topics, I stand up as if I were standing before a class and tell the story in good English to my mother and myself.

What I Do When I Study

When I want to study I get my pencil and paper and books and sit down at the desk and begin. If I get stuck on a hard problem or don't know how to spell a word, I just ask my sister. She knows anything almost.

Miss ..... gives us enough work to keep us studying for a while, Miss ..... gives us some too.

In school when we study and we do not know how to spell a word or do an arithmetic problem we have to look the word up in the dictionary and figure the problems ourselves.

What I Do When I Study

When I study, sometimes I do, I gaze around the room, or if (I) get mad sometimes I sit and wonder. If I want to get my work done and go out to play I will get a paper and see if I can write what I have learned. Sometimes I have a clock in front of me so I can tell how long I have been studying.

The first two of these papers represent the work of the better pupils, the third and fourth are typical of

the middle fifty per cent and the lower twenty-five per cent. They are fairly representative of the replies of the one hundred children. Two of the children show considerable ability to analyze their own study processes. The other two are more or less unaware of what study really implies. There is doubtless a high degree of relationship between the child's general intelligence and his ability to analyze his processes in study.

5. *Additional light on the children's responses.* Additional light is shed upon the development of children's minds in regard to study by the comments on and excerpts from themes reported to the writer by one teacher-investigator. These comments are given in the words of the teacher of these children, Miss Helen Hilliard, who had charge of the work in English in Grades 7 and 8.

One child confessed that to him study is one of the hard things of life. Two placed emphasis upon the value of study; one boy wrote, "Study, I think, is one of the best methods of learning."

Eight different definitions of study were attempted. Six children defined studying as memorizing; one as thinking; one as observing; one as learning, which meant to her acquiring knowledge by any means whatever; one as forming mental pictures on the brain, and one repeated Webster's definition that studying is applying the mind to books in order to secure knowledge. Sixteen stated, more or less clearly, that study is a repetition of some thought process, however indeterminate and vague that process may be; and two defined study as a matter of consuming so much time. Said the one, "I go over every lesson for half an hour," and the other, "I have a clock in front of me so I can tell how long I have been studying."

Of the one hundred pupils, twenty-two presented indefinite, hazy definitions of study. Of these, five rank high in their classes and are registered as above normal in intelligence. I should assign the indefiniteness of their answers to the lack of sufficient analysis of their study habits. A second report would, in all probability, elicit

better replies. Six others of these twenty-two are far from being dull students but have little ability, ordinarily, to express their thoughts in written form, one being highly nervous and excitable when set to an unusual task. The remaining eleven, I judge, by means of their indefinite statements, to have given a consistent account of their thought processes. One says of committing a poem, "I learn the best I can." Another writes, "I think and think and think, I then close my eyes and think it all over again"; and another, "I study and study, over and over and over." These last two statements illustrate the definition cited above, that study is the repetition of something. . . .

Occasionally, touches of unconscious humor crept in. Said one boy, "After I study a lesson, I resight it"; and another, "When I study I use the thought movement."

6. *Comparison of results of analysis of themes with questionnaire study.* A comparison of the results of the preceding study with that of Charters reported in the *Journal of Educational Research* [1] was next made. These data were gathered by Mrs. Charters by submitting a questionnaire to 258 college freshmen and sophomores in Stephens Junior College. The particular data used for comparison appear as a summary of activities mentioned by different students as a part of the preparation for textbook study. The present writer has changed the *number* of students mentioning each item to *per cent* of students mentioning each item and added two items from paragraph 2, page 42 of the same article. This material appears as Table V.

It will be noted that the data in Table V bear great resemblance to those gathered by the writer by the method of analysis of children's themes. The ques-

[1] Charters, Jessie Allen. "How Two Hundred and Fifty-eight Junior College Women Study," *Journal of Educational Research*, Vol. XI, pp. 41–49, January, 1925.

TABLE V

HOW 258 COLLEGE WOMEN PREPARE A TEXTBOOK ASSIGNMENT [1]

ACTIVITY	PER CENT MENTIONING
1. Read the lesson once	41
2. Read the lesson twice	44
3. Read the lesson three times	9
4. Read more than three times	0
5. Make an outline	34
6. Make an outline sometimes	1
7. Underline words	3
8. Take notes in notebook	5
9. Make marginal notes in a text	35
10. Recite it aloud	3
11. Recite it aloud sometimes	1
12. Recite it in a whisper	4
13. Recite it in mind only	26
14. Make written summary from memory and check up	8
15. Connect material in study with past experience	29[2]
16. Connect material studied with past experience sometimes	13[3]

tionnaire revealed facts about methods of reviewing, difficulties with concentration, and methods of note-taking that the writer's method did not reveal. However, the results are so similar in many respects that it seems permissible to make some comparisons of methods of study of college students with those of children in elementary schools. This is done in Table VI, in which

[1] After Charters.

[2] Added from paragraph 2, page 42, of the Charters study. [3] *Ibid.*

TABLE VI

STUDY ACTIVITIES OF ELEMENTARY-SCHOOL STUDENTS AND COLLEGE STUDENTS COMPARED

RANK	*School A* 1665 CHILDREN GRADES 3A–9	*School B* 100 7A AND 8B CHILDREN	*Junior College* 258 COLLEGE FRESHMEN AND SOPHOMORES[1]
1.	Reading lesson over (25)	Reading lesson over (99)	Reading lesson more than once (53)
2.	Rereading lesson (17)	Reading each topic separately until understood (73)	Reading lesson once (41)
3.	Looking up words (15)	Rereading after studying each topic separately to fix facts (39)	Making marginal notes (35)
4.	Paying attention (13)	Looking up words in dictionary (34)	Making an outline (34)
5.	Try to get thought (11)	Using encyclopedia (34)	Connecting present lesson with past experience (29)
6.	Answering questions (8)	Reading lesson once to pick out most important facts (32)	Reciting lesson in mind only (26)
7.	Thinking about lesson (8)	Try to fix mental image (22)	Make written summary from memory and then check up (8)
8.	Find important points (8)	Have somebody question after study (18)	Take notes in a notebook (5)
9.	Ask questions (6)	Scan lesson rapidly to get trend of thought (17)	Recite lesson in whisper (4)
10.	Look up reference (5)	Read interesting topics once only (17)	Recite lesson aloud (3)
11.	Recite — say lesson over (5)	Seldom read more than twice (17)	Underline important words (3)
12.	Use notebook — write (5)	Reread difficult lesson more than twice (17)	Make an outline sometimes (1)
13.	Close lips — study intently (4)	Use outline in studying long assignment (17)	Recite lesson aloud sometimes (1)
14.	Outline lesson (2)	Summarizing, using text or own questions (13)	
15.	Review previous lesson (2)	Reproduce or recite in own words (13)	
16.	Study maps (2)	Write down important facts (12)	
17.	Follow directions (2)	Try to visualize narrative or poem (12)	
18.	Use index (2)	Use line by line method in memorizing (9)	Charters reports only two students learning by wholes

[1] After Charters.

the data gathered by the writer is checked against the Charters' data.

The items are listed in parallel columns according to rank in each study as determined by the per cent of pupils mentioning any given activity, which is indicated in parenthesis following each item. Items of equal per cents in each column are of equal rank.

Table VI shows that the results of the two studies are strikingly similar in a general way. The investigation in School A, taking in as it does grades 3A–9, reveals more immature methods of study than are shown in the other columns, and some activities that older children would probably take for granted. The reports of 100 pupils in grades 7 and 8 compare favorably with the reports of college freshmen and sophomores. The maturity of the older pupils is clearly shown in the relative emphasis placed upon different items. It is, however, quite remarkable that an activity analysis by younger children in grades 3A to 6 should have revealed so much. More college students know more things about study but some elementary children know apparently as much as college freshmen and sophomores.

7. *Summary of results.* *a.* The results show that the analysis of themes elicited considerable information about the study activities of elementary school children.

b. Table III indicates that the five activities in study most frequently mentioned by 1665 children are *reading the lesson over*,[1] *rereading*, *looking up words in the dictionary*, *concentrating or paying attention*, and *trying to*

[1] *Reading the lesson over* is interpreted as reading the lesson one or more times. The phrase is reproduced verbatim as given by children.

get the main thought. These items are probably those most emphasized by teachers in elementary-school classes. Items mentioned by eight per cent or less of the children are eighteen in number. They represent activities in the main which are desirable and indicate possible points of attack in improving study conditions.

c. Table IV indicates that the four items mentioned most frequently by 100 7A and 8B children are *reading the lesson over, reading each topic separately to fix main points, looking up words in dictionary,* and *reading lesson once to pick out most important points for study.* This table shows more maturity and a longer list of pertinent activities than those given in Table I.

d. Table V shows that 258 college freshmen and sophomores mentioned most frequently, as a means of mastery of textbook assignments, *reading the lesson more than once, making marginal notes in the text, making an outline, connecting material with past experience,* and *reciting to themselves.* Other activities are mentioned by less than nine per cent of the college girls considered.

8. *Conclusions. a.* There is a great similarity between the results of the analyses of themes as made by the writer and the questionnaire study made by Charters.

b. College students are somewhat more mature in their methods of study than the elementary pupil in grades 3A to 9 taken as a whole.

c. Students in grades 7A and 8B compare favorably in their mention of study activities with college freshmen and sophomores.

d. None of the elementary pupils mention making marginal notes or underlining important words. This is forbidden in most schools and cannot be done except clandestinely.

e. Reciting aloud is mentioned by few elementary school children except in learning oral material for oral reproduction. It is used as a study method by three per cent of the college students.

f. The only difference of a basic character between the methods of college and elementary school students as revealed in this study is a better analysis of reading habits by college students and a tendency upon their part to read fewer times and to utilize underlining and marginal note-taking as devices for securing results in study.

g. Elementary school children do all the things college students do — although not in the same proportion — except mark up their books and recite aloud, and it is probable that the latter method is still much used in some elementary schools.

h. The method of memorizing a selection as a whole is mentioned by none of the elementary school pupils. This agrees with Charters' findings among college students.[1]

i. A study of what children know about study would seem to promise much information of use to the teacher in planning training in how to study.

j. The results show, not lack of information about proper methods of study by the whole group, but lack of proper information or practice by the lower seventy-five per cent.

[1] See *Journal of Educational Research*, December, 1924.

k. It is probable that the greater power of introspection by college students, their superior ability due to selection, and the more intensive method of checking their analyses, is responsible for the greater emphasis upon relevant study activities by them; and that training in introspection and analysis would enable elementary school children to make a better showing. This study proves that elementary school children as low as grade 3A can analyze their study processes if encouraged to do so.

l. As far as elementary school and college students are concerned, as both McMurry and Earhart[1] found a number of years ago, the most frequent activities in study are reading and memorizing.

II

ANALYSES OF STUDY BY EXPERTS

From analyses of children's themes and the results of questionnaires and interviews with students, we turn to the work of educational writers to attempt to get from their point of view a clearer idea of what study should be in the practices of students. The first to be considered is the excellent analysis of study by McMurry which, since it was written, has not been completely replaced by any other analysis.

McMurry's analysis. — McMurry regards study as "systematic work . . . that is necessary in the assim-

[1] McMurry, F. M. *Op. cit.* Earhart, Lida B. *Teaching Children to Study*, Houghton, 1909.

ilation of ideas."[1] He discusses eight specific factors that are most important in study:

1. The finding of specific purposes
2. The supplementing of thought
3. The organizing of the facts collected
4. The judgment of the worth of the statements
5. Memorizing
6. The using of the ideas
7. The tentative attitude
8. Provision for individuality

The significance of these factors is brought out admirably by McMurry. He points out that study implies first an objective or objectives. People really study only when confronted with a difficulty which demands solution; at other times they learn but do not study. (Hence the present emphasis upon directed study, problem-solving as an act of study, and the like.) In study involving the use of books, the student must also supplement the thought of his author and draw upon his own past experience in order to understand the significance of what he reads, as well as the ideas as they stand. Further, he must organize the facts collected from others, analyze and classify the facts, and assimilate them for his own thinking. Again, he must be critical of what he reads, judge of its value for present or future purposes, and reject that which he finds of little use or significance. Next, he must memorize either the ideas or the words, or both, of the author he is reading in order to use the facts or ideas in his future thinking. He must also use the ideas so gained for the sake of fixing them in memory and appreciating their full sig-

[1] *Op. cit.*, p. 26.

nificance; for ideas merely noted and unused soon pass from the mind and leave little influence upon subsequent thinking. The student must also be encouraged to adopt the tentative attitude toward such books as he reads in order that the power of independent judgment and openness of mind — qualities which distinguish the real thinker from the mere memorizer of facts and ideas — may be developed. And finally, provision for individuality should be a part of study in order that the student may come to have respect for his own judgment and become independent in thinking, rather than remain a follower of others. These are the factors in study as outlined by McMurry, and their significance is at once appreciated by the thoughtful reader.

The emphasis placed upon study as a method of work and the importance of teaching children how to think as well as how to memorize, has been apparent in the work of all those who have followed McMurry. His emphasis upon the necessity of teaching children in the elementary schools how to study effectively has been reflected in an indirect manner in much of the recent work done in connection with problem and project teaching and in silent reading. Study, as McMurry views it, is learning to become independent of one's teachers. This is more important than learning many unrelated facts. Teaching becomes a method, then, of teaching children to learn; and study ordinarily is a means of independent learning through books.

The four factors that at the present time are most emphasized by writers and teachers of silent reading

are rate, comprehension, organization, and remembrance. Specific training in the skills involved in each of these factors is given. Hence it may be said that, through silent reading, teachers are beginning to do specifically what McMurry said should be done — namely, teach children "how to study." Fortunately this is being done in the elementary school where the training will be most effective in helping to establish life-long habits.

Earhart's analysis. — In her discussion of the nature of study Earhart says,

> First of all, some definition of the term *study* is necessary in order that misunderstanding may be avoided and that we may know our problem definitely. Studying in the highest sense is the process of assimilating knowledge, of reorganizing experience. As ordinarily employed, the term *studying* often means much less than this, and includes any mental activity directed toward the accomplishment of some end, whether that end be the memorizing of facts in a geography lesson, the learning of a story in reading, or the mastery of a list of words in spelling. In this common usage of the word it includes the mind's activity that is directed towards the acquisition of ideas, whether these ideas become an organic part of knowledge or not. Learning dates in history, and committing poems and definitions to memory do not always involve the assimilation of knowledge, yet teachers call the effort to accomplish these tasks by the same name that is applied to the mental efforts of a philosopher who is engaged in some weighty problem. The two kinds of studying are quite different. The one is more mechanical than the other and results largely in the accretion of facts. The other is organic and results in rearrangement and assimilation of ideas; in short, it involves thinking. It is this latter form of mental activity, which is generally acknowledged to be of a higher type than the first, that is the object of investigation and discussion in this book.[1]

[1] Earhart, Lida B. *Op. cit.*, pp. 4–6.

Earhart divides *logical study* into two main types: (1) inductive study and (2) deductive study. The factors in inductive study which she enumerates are (*a*) The location of a problem, its clear definition, and recognition of it as a felt need; (*b*) the formation of an hypothesis; (*c*) the collection of data; (*d*) the organization of ideas; (*e*) the exercise of scientific doubt; (*f*) the verification of the conclusions reached in the process of inductive thought; and (*g*) the fixing in memory of the knowledge as formed. This list of factors is taken from Earhart's Chapter II and does not follow her enumeration exactly but is the essence of her thought. It is observed that the analysis is in effect an analysis of an act of inductive thinking which may or may not occur in the presence of the printed page.

Deductive study, according to Earhart, does not differ from inductive study except that the different factors are "modified to suit the changed purpose of the study which is to apply principles rather than to formulate theory."[1]

From the foregoing discussion it is clear that Earhart favors the definition of study as an act of logical thinking, either inductive or deductive as the case may be, and that the primary purpose of such an activity is to help the individual to solve a problem. The real meaning of study is found in thinking. At the same time Earhart recognizes that, as commonly used, the term includes associative and observational learning.

[1] *Ibid.*, p. 79.

Strayer and Norsworthy's analysis. — In a chapter on "How to Study," Strayer and Norsworthy[1] follow McMurry in describing study as an act of purposive thinking. They note that there are various types of study. Among the types of study they discuss are (1) study involving habit formation, (2) study involving memorization, (3) study involving appreciation, and (4) study involving the forming of a judgment. They note that study may also be classified as supervised or unsupervised, as group or individual. Again, study may be classified "as it has to do with books, with people, or with materials." Their conclusion is that "study is a big term, including many different varieties of activities, of varying degrees of difficulty and responsibility."

Davis's analysis. — In *The Technique of Teaching* Davis discusses the study period as follows:

> In the typically organized school, the study period represents the pupils' direct contact with books. Solving arithmetic problems, memorizing a poem, studying spelling lists, and writing sentences according to assigned requirements, represent study. Much of such activity is futile because the assignment sentences pupils to labor upon unprofitable material, fails to make clear what is expected, or is defective in motivation.[2]

Suggestions by this writer, generally applicable to the improvement of ability to study, treat of concentration, systematic study, lack of reading ability as an obstacle, waste of underlearning, the necessity of reflective thinking, home study, supervised study, and

[1] Strayer, G. D., and Norsworthy, N. *How to Teach*, Chapter XIV. Macmillan, 1917.

[2] Davis, S. E. *The Technique of Teaching*, pp. 22–26. Macmillan, 1922.

study problems and directions. It is implied in Davis's discussion that study is primarily the application of the mind to the book. He makes no distinction between the various types of study.

Hall-Quest's analysis. — Hall-Quest, one of the most prolific writers and investigators in the field, defines study as "a series of acts performed by an individual in order to stimulate and adequately direct the learning process." [1] He wishes to include in study such acts as memorizing, drill, and learning by observation because of the importance of keeping the teacher's attention upon these important processes. He classifies study as *reproductive study*, *productive study*, *book study*, *study apart from books*, *judgments*, and *appreciational study*. This enables one to classify all activities in school under the general term *study*. Among the acts involved in study enumerated by Hall-Quest are concentration, understanding, analysis, synthesis, observation, assimilation, thinking, reasoning, memorizing, comparison, judging, reviewing, experimenting, and testing.[2] The supervision of study becomes, under this analysis, supervision of the learning process; and study may be defined as learning.

Stormzand's analysis. — Stormzand[3] accepts the definitions of study given in the *International Dictionary* and lays emphasis upon thinking as an element in study rather than upon reproduction of the author's

[1] Hall-Quest, A. L. *Supervised Study in the Elementary School*, p. 8. Macmillan, 1924.

[2] *Ibid.*, pp. 6–7.

[3] Stormzand, M. T. *Progressive Methods of Teaching*, pp. 88–111. Houghton, 1924.

thought alone. He includes in his analysis of study the following activities: reading, thinking, accurate observation, experimentation, practicing a skill, and attentive listening. In an excellent discussion Stormzand shows the importance of these activities.

Summary of Section II. — From a review of the various opinions on the meaning of the term "study" given in the preceding paragraphs, it appears that the current tendency is to emphasize study as a thinking process which involves observation, reasoning, judgment, conclusion, and the application of the conclusions so formed. It involves the use of certain tools which may be designated in a general way as the tools of learning. Study is a purposive act, not a mere imitative procedure without aim or end. It occurs in many forms, and may involve many different purposes. Among the purposes which have been predominant in the school is the purpose of reproduction of the textbook. This purpose leads to thoughtless repetition. The modern school of thought emphasizes teaching children to study as teaching them to learn and think. Studying, then, may be defined as the process of learning to become an independent observer, reader, and thinker.

III

PRINCIPAL ACTIVITIES INVOLVED IN STUDY

No complete detailed analysis of the activities of study has ever been made so far as the writer knows, yet the principal activities are distinguishable as presented in the preceding reviews. The writer's own

interpretation of study is now developed in the following pages.

Study as observation. — Before man had the use of books as means of recording and preserving organized knowledge, he learned through observation and experience. In the last century, with the rapid multiplication and spread of books, the tendency to learn by direct observation has been less marked, particularly in American schools. Nevertheless learning by observation is still unavoidable in life and is indispensable in the school if the latter is to meet the needs of real life. Observational study may involve all the features of an act of study in which books are used, except that real objects, processes, and events are substituted for those found in books. It includes:

1. Discovery of a purpose or need for observation.
2. Deciding on what particular things, processes, or events to observe.
3. Observing — collecting ideas and facts.
4. Organizing and evaluating the ideas so gained.
5. Forming conclusions on the basis of the facts so collected.
6. Using the ideas so collected and the conclusions so formed.

Training in observation as a form of studying is a very important part of the complete development of the learning process. Undirected observation, or that which goes on unsystematically and with little conscious purpose, while it may furnish the individual with valuable ideas and experiences, will not lead to as accurate or as valuable results as direct training initi-

ated by the teacher and guided by her. Observation of life by adults will be much more active and effective, if they as children are taught to observe accurately, to record such observations, to draw conclusions on the basis of facts, and to utilize the results of such observations in future study and thinking. An important type of study is therefore designated as observational study.

Study as reading. — In place of the real object, process, or event, may be substituted the printed page as a means of helping one to solve his problems. In this case there is needed a particular set of artificial skills to carry on the process, since reading is an artificial, man-made process and not a natural method of learning. Reading is utilized as a tool which enables the student to solve his problems. Study as reading includes:

1. The discovery of a purpose for which the reading shall be carried on.
2. The collection of materials to be read.
3. Preliminary survey of the materials.
4. Selecting and organizing the parts of the material which bear on the problem.
5. Studying these parts; comparing, judging, evaluating the facts presented.
6. Forming conclusions from the facts so studied.
7. Memorizing such facts and conclusions.
8. Using such facts and conclusions in future study situations.

That reading may be a form of study and still not involve an act of thinking has been pointed out time

and again. The reader may approach the page with no definite problem except that of understanding and reproducing the thought of the printed page. He may collect new ideas, but solve no new problems, or form no new conclusions. In other words, he may perform one or two of the acts outlined above without completing the series. In that event he may be said to have carried on an act of reading on a lower level which might be called mechanical. This type of study may be called observational or reproductive study. It is to be noted that it has been very common in the school. Memorizing the thought of others and reproducing it is, however, not a high type of study.

Again, reading may be used merely as a means of enabling the reader to commit to memory the written thoughts of another. In this case, the reading may be a matter of noting the words and pronouncing them accurately, either orally or mentally. Although thoughtful reading should normally precede any attempt to memorize words or ideas, nevertheless, much study is in the nature of this form of mechanical word-noting and remembering, and is largely a process of drill. This use of reading as a tool in study is perfectly legitimate, providing the material to be committed is worth while and is understood by the student.

That reading has many other uses in study than those here suggested will be apparent to the reader. A more complete discussion of reading in its relations to study will be found in the next chapter.

Study as drill. — There are certain forms of learning which involve repetition of motor processes for their

successful attainment. Among such forms are learning to write, spell, draw, and to perform certain physical skills. In this type of learning there is little reflective thought involved. The important factors are correct repetition of the skills to be learned until they have become habits. The conditions which make such work effective are:

1. A desire to learn the skill.
2. A correct start.
3. Attentive repetition distributed efficiently in relatively short learning periods.
4. Diagnosis and elimination of faults as they appear.
5. A feeling of success and attainment.

A second type of study involving drill is the memorization of sets of isolated facts or connected materials such as principles, laws, rules, verses of poetry, and selections of prose. The conditions which make such work effective are similar to those mentioned above.

1. A desire to learn.
2. A correct start.
3. Attentive repetition.
4. Distributed practice.
5. A feeling that success is being attained.

That these forms of study are not on the plane of the type which was described by McMurry is very apparent. Nevertheless, they represent a type of learning in which the child must be engaged profitably. The writer sees no error in including such activities under the term *the drill type of study*. They must be put in

their place, be done efficiently, and not be allowed to crowd out other higher forms of mental activity. The memorizing of tables in arithmetic, words in spelling, rules in language, and literary gems is important and the child must know how to perform such learning exercises economically and profitably.

Study as thinking. — Study as thinking may go on in connection with the process of reading as outlined under *Study as Reading*, or it may go on independent of the reading process. In the latter event it is likely to be on a higher plane than the one on which it is ordinarily found in the school. Some of the situations in which people outside the school may be said to use reflective study are as follows:

1. Thinking out the solution to a mental problem; such as, seeking the causes for financial difficulties or determining upon a course of action.
2. Pondering over past experiences and seeking to understand their significance.
3. Thinking out the moves in a game of chess, dominoes, or cards.
4. Solving a mechanical puzzle.
5. Mentally reviewing knowledge or experience for the purpose of fixing such knowledge or experience in memory.
6. Observation of persons, places, or things in an effort to realize their significant features, their peculiarities, and their uses, as in observation of teaching, experiments in science, observation of nature, and the like.
7. Studying stage costumes, make-ups, etc., in an effort to make them serve a particular purpose.

8. Studying combinations of color, fabric, furniture, hangings, and the like, as in art, home decoration, and in other similar situations.

The above activities involve all the characteristics of reflective thinking. They may go on independent of books, or books may be brought in to make the activities more successful. The unlettered man, however, may, and often does, develop a high degree of skill in such thinking.

An act of reflective thinking calls into use all the higher powers of the mind. Perception, conception, association, judgment, and reasoning are involved in the act. Effective thinking of this sort must be built upon accurate observations and experiences in life, adequate associations between and accurate understanding of these experiences and observations, and, in forming new concepts, the use of percepts, concepts, and associations previously formed. It may deal with past experiences and their significance or it may deal with observations and present experiences — direct contact with persons, things, places, and events — leading to new generalizations. It may deal with these same materials indirectly through the printed page, or it may deal with both the printed page and real objects and experiences. The distinguishing attribute of reflective thinking is a problem, or as Dewey conceives it, a *felt need*.

The process of reflective thought goes on in somewhat the following fashion:

1. The thinker gets into a situation in which there is a difficulty.

2. This difficulty is defined and located; *i.e.*, the person is able to appreciate just what the difficulty is.
3. Tentative suggestions as to the solution of the difficulty are collected, either from past experience or from observation and study of the difficulty.
4. These tentative suggestions are examined and compared, and judgments are made of a tentative character as to their bearings on the solution of the difficulty.
5. Further testing of these conclusions is made leading to an acceptance of the tentative conclusion, or to a different conclusion which is accepted as final.
6. The conclusion so formed is utilized as a base for further thinking and for action.

This analysis is essentially the Dewey analysis of a complete act of thinking with two new steps added, the situation and the application of the conclusions formed. The reader is referred to Chapter VI in Dewey's *How We Think*,[1] for further and more adequate description of the thinking process.

It is to be noted in this connection that study as reflective thinking is the highest form of mental activity when it becomes *creative thinking*. The thinker may review the experiences of others and arrive at the same conclusions, or at different conclusions, or he may start out with a problem and arrive at new conclusions and new concepts that have not been reached before. Looked at from this angle, education is an accumulative

[1] Dewey, John. *How We Think*. Heath, 1910.

process which has for its purpose the ultimate creation of new thought. To train pupils to rethink old concepts is to prepare the occasional genius to create new thought.

The school is at present experimenting with the development of power to think reflectively through the use of the problem and project methods which set up a situation corresponding in general with the outline of an act of thought in the preceding paragraphs.

The highest form of study is reflective thinking. Other forms of study may be thought of as co ntributory to the ultimate purpose.

Directed study. — McMurry advanced the idea in *How to Study* that the fundamental purpose of teaching was not to give children information primarily, not to furnish them with predigested, arranged, and organized facts, but rather to train them in methods of working and thinking for themselves. Present practices are just catching up with this idea. Within the past few years a term "directed study" has been substituted by many for "supervised study" as more descriptive of the correct educational point of view. The essence of directed study is that children shall be taught how to study and then be allowed to exercise their powers in actual study. Directed study implies that the teacher shall be a director of learning rather than a hearer of lessons. In other words, her chief purpose shall be to train the child in correct and economical methods of learning rather than in the memorization of organized bodies of facts. The chief drawback to the accomplishment of this ideal, which will be accepted by large

numbers of modern educational workers, is that teachers have themselves not been sufficiently well trained actually to direct the learning process with any marked skill. A thorough understanding of reading and other forms of study, as learning, is essential before directed study as an ideal will be realized. Directed study is nothing more than directed learning. It implies the abandonment of the old fashioned recitation in favor of learning and thinking periods under the teacher's direction. It means more activity on the part of the pupil and less lesson hearing and lecturing on the part of the teacher. It means that teachers must have a more adequate idea of how children learn and how to direct their learning.

Supervised study. — The term "supervised study" has been in less favor during the last few years than the term "directed study." There is no essential difference between the two except perhaps in a point of view. "Supervised study" as defined by Hall-Quest is "directed teaching." If it has come to mean this it has practically the same significance as "directed study." Unfortunately, supervised study in its first presentation suffered from too much emphasis upon its features of organization rather than the actual direction of the learning process. It may be pointed out here that supervised study cannot be successful as a mere administrative device. It must be founded upon a thorough understanding on the part of teachers of the place of independent study in the educational process and it must be based upon skilled teaching of the techniques of reading and other forms of study.

SUMMARY OF THE CHAPTER

Study is a term used to express many different meanings. To children and even to college students it still means to a large degree the reading and mastering of the printed page. Educational writers are anxious to give it an additional meaning as a process of reflective thinking. There are many forms of study, including observational study, reading, study as drill, and study as thinking. The highest form of study is found in reflective thinking. Directed and supervised study have come to mean study which is characterized primarily by a skilled direction of the learning process on the part of the teacher and by greater participation in learning of a type leading to reflective thinking on the part of the pupil.

SUGGESTIVE PROBLEMS

1. What are some common uses of the term "study"?
2. Give evidence to show whether or not the teacher or student may be said to have, ordinarily, a clear concept of study.
3. Prove that neither teachers nor children can be said to have a clear idea of the relationships between reading and study.
4. What part of study is done without the aid of books?
5. How are books used to the detriment of the development of the powers of independent thinking in the child?
6. What do the data given in Section 2 of this chapter reveal in regard to the study habits of children?
7. To what extent is Dr. McMurry's analysis of study sufficient for the use of the classroom teacher?
8. Give facts to show that children fail in study because they cannot read. What is the remedy?

SUPPLEMENTARY READING

1. Earhart, Lida B. — *Teaching Children to Study*, Chapters II–III. Houghton, 1909.

2. Hall-Quest, A. L. — *Supervised Study in the Elementary School*, Chapter I. Macmillan, 1924.

3. McMurry, F. M. — *How to Study and Teaching How to Study*, Chapters II and XI. Houghton, 1909.

4. Stormzand, M. J. — *Progressive Methods of Teaching*, Chapter IV. Houghton, 1924.

5. Strayer, G. D. — *A Brief Course in the Teaching Process*, Chapter VIII. Macmillan, 1911.

6. Strayer, G. D. and Norsworthy, Naomi. — *How to Teach*, Chapter XIV. Macmillan, 1917.

CHAPTER IV

The Place of Reading in Study

An attempt will be made to bring together in the present chapter the two viewpoints presented in the preceding chapters and to make clear, if possible, the distinction between reading and study.

The nature of reading. — In Chapter II the nature of reading was discussed and it was shown that reading is a process of interpreting the printed page for the purpose either of understanding it oneself or of transmitting the thought to others. It was shown that this process may involve all of the following: recognition of words, interpretation and comprehension of the thought as presented by the author, organization of the thought for definite purposes, retention, reproduction of the thought when this is needed, and skill in handling printed materials. Thus reading was emphasized mainly as a thought-gathering process involving a particular type of technical skill in interpreting printed symbols.

The nature of study. — In Chapter III the nature of study was discussed and it was shown that study is ordinarily regarded as a process of reading and memorizing the printed page. The opinion of many writers, however, is that the distinguishing characteristic of true study is purposive learning with the act of reflective thinking as an end point. It was further shown

that study may have various forms of which reading is only one and that when reading is used it is a substitute for direct observation.

Two uses of the term "reading." — In study, the term "reading" has two uses: in the first place it is associated with material much utilized in study, and in the second place it describes the process by which content is made available to students. The type of content most essential is informational content. The type of reading which becomes most significant is, therefore, the work type of reading.

The act of reading the printed page enables the student to supplement the more direct types of learning through observation of and experimentation with real persons, places, things, events, and processes by substituting an indirect method of observing these same objects of study. The material of reading, or written and printed language, provides the student with:

1. Racial wisdom in permanent form.
2. Vicarious experiences of many kinds directly unavailable to the student.
3. A means of continuing education after school is over.
4. Examples of efficient thinking for practice and emulation.
5. Solutions of problems already solved which enable him to short-cut experience.
6. Systems of facts, laws, rules, and principles for ready reference and study.
7. Problems in permanent and tangible form for continued investigation.

The act of reading provides the student with a tool by means of which written records are made accessible. In itself the mechanical process has no value. Only as it is used to promote individual and racial progress is it significant.

Mechanics a means to an end. — The mechanics of reading, as was stated in the last paragraph, are, then, only a means to an end. The amount of time necessary to master the mechanics might well be justified on the ground that reading furnishes the individual with a means of enjoyment through leisure reading if there were no other values; but the larger significance of reading is found in its use as a tool in promoting human progress through the use of written records. It is in the use of reading as a tool for mastering racial thought and experience that its true significance in study appears and it is reading as a psychophysical act that makes the unlocking of past experience of the race possible.

Some writers would differentiate between reading and study. — Some writers would draw a distinction between reading as an act of simple fact- or thought-noting and reading as an act of thinking. Judd and Buswell say,

> . . . there are many kinds of processes which may be aroused in the presence of the printed page which ought not to be classified as reading. Thus it will be shown that when a student is asked to pay attention to grammatical facts he is no longer left free to read. He is set a task of analytical study so engrossing that his mental attitude and his whole performance must be recognized as something other than mere reading. In somewhat less striking degree the student who is asked to give his attention to the vocabu-

lary of a passage turns away from the subject matter and, in so far as he does this, gives up reading.[1]

By means of photographic studies of eye movements, these writers show that when the student is asked to read material of varying types the nature of his physiological adjustments to the material changes. If the material is simple and easy, eye movements are regular and relatively few; but if the material is difficult, they become much like the eye movements of children who are learning to read. These writers conclude, therefore, that there is a kind of reading that ought to be termed not reading at all but analytical study. It seems to the present writer, however, that it would be more accurate to say, since the presence of the printed page is undeniable, that reading is in this case an accompanying tool or instrument and that while the printed page is the objective material of thinking, the major emphasis is upon reflection and analysis rather than upon simple thought-noting. The process is a type of reading for which we as yet have had no entirely satisfactory name. It is difficult to see how one can call a process that is carried on as reading by another term than that which will include the idea of reading as a tool used in the process. The same kind of thought as that described by these writers in the presence of the printed page goes on without it when the thinker is examining a mental problem from various angles seeking to find a solution for it. The material here present as the printed record of thought becomes then a problem which requires analysis; but it is still a type of reading.

[1] Judd, C. H. and Buswell, G. T. *Op. cit.*, p. 47.

C. T. Gray says in discussing reading and study:

> Study usually involves several readings and more or less reflection on the part of the pupil. Reading is more superficial, and the elements of reflection are not so pronounced. Brown holds that reading and study are synonymous. It seems more consistent to think of reading as fundamental to study, and to think of study as being made up of several readings, or of rereading plus something else.[1]

Here again it is difficult to see how one can divorce reading from the study situation. It seems that what is needed is a term to designate the reading which is involved in this situation and to make it a term synonymous with at least one type of study.

Wheat argues for a distinction between reading and study as follows:

> The distinction between "reading" and "study" needs to be kept in mind. Pupils will study — and it is important that they should study — material that is neither easy, rapid, nor immediately interesting. This is in perfect accord with the demands of certain subjects that are to be learned, and does not disagree in any way with the requirement for the development of more and more effective habits of concentrated application to the work of the school. But reading is not study. Reading is getting the meaning easily and rapidly from printed material, and the content of the material must appeal to immediate interests. Reading is mechanically easy, and both easy and rapid, because of the presence in the reading material of interesting and appealing content.[2]

Later in the same volume Wheat[3] states that assimilative reading and study are synonymous terms. He gives suggestions for teaching assimilative reading and

[1] Gray, C. T. *Op. cit.*, p. 26.
[2] Wheat, H. G. *The Teaching of Reading*, pp. 272–73. Ginn, 1923.
[3] *Ibid*, pp. 292–93, 301.

says that these suggestions may also be called suggestions for teaching how to study.

1. A definite purpose should guide the reading.
2. The reader should attempt to grasp the central thought.
3. The reader should seek the bird's-eye view.
4. The reader should try to interpret.
5. The reader should judge the worth of statements.
6. The principle of selecting and using ideas should control.

That the assimilative type of reading is an act or type of study is apparent.

Lyman looks at the relationship in a somewhat different fashion:

> Throughout the discussion the activities of reading, of thinking, and of studying are considered as three aspects of the one process by which we learn to use materials which we find in printed form. All are activities of the mind. We read serious books to get ideas; we think about them to see what these ideas mean; we study ideas and their meanings, endeavoring to make them our permanent possessions and to get ready to use them in problems of our own. Of course there are certain kinds of studying not based on reading.[1]

Lyman divides reading into two types: (1) reading which involves merely the recognition of the printed symbols; and (2) reading which involves also the recognition of the meanings of these symbols. Lyman later points out that reading which involves only the recognition of the symbols can scarcely be called reading. It is difficult, however, to see how it can be denied that such an act is reading in one form at least.

From the foregoing it is apparent that certain indefinite uses are made of the term "reading" and that the relationship between reading and study is not entirely

[1] Lyman, R. L. *The Mind at Work*, pp. 14–15. Scott, 1924.

clear. The above discussions, however, seem to emphasize the fact that reading in study is of different kinds or of varying degrees of complexity as a mental process.

The different kinds of reading involved in study. — It seems more defensible to say that there are different kinds of reading in study just as there are different kinds of study. If we regard study as employing learning of different types — namely, observational learning, learning a skill, memorization, and reflective thinking — and reading as a form of study, then we should regard reading in study as paralleling in complexity the different phases of the study process. Thus reading may be any one of the following:

1. *Observational reading.* In this type of reading the student attempts to note the ideas of the author and accepts them as they stand without entering into a complex thinking process. This may include simple pronunciation of the words of the writer, simple observation of the thoughts, or memorization of these thoughts without reflection, evaluation, or analysis.

2. *Assimilative reading.* In this type of reading the student is attempting to understand the thoughts of the writer and make them his own. He has a specific purpose in his reading. He wishes to use the ideas collected in his future thinking. He does not, however, assume the critical attitude but rather sits at the feet of the writer to learn.

3. *Analytical reading.* In this type of reading the student is concerned with the ideas of the writer from the standpoint of critical judgment of the worth of these ideas. He challenges every statement. He asks

of the material, "Is this true?" and "What is its purpose? What does it signify?" He is thus performing the act of independent reflective thinking.

On the mechanical side, analytical reading may demand a careful analysis of the words and sentences written by the author. The material may be mechanically so difficult, as when presented in foreign language, that the form must be mastered before the thought can be gained.

Analytical reading is, of course, the most difficult type of reading, just as analytical thinking is the most difficult type of thought. It parallels, as an act of reading, the examination of a difficult mental problem, the working of a mechanical puzzle, or other complex mental act. The chief difference is that the printed page is present as the objective material of the analytical thinking rather than some other form of material.

Appreciative and recreatory reading in study. — It is very seldom that recreatory reading may be called study. Generally the attitude toward recreatory reading is that of appreciation and pleasure, not of problem-solving or intense purposive mastery. Material is ordinarily easy enough so that the reader is not forced to analyze the thought or to interpret the style. Relatively few people read material for recreative purposes that demands of them that type of purposive intellectual work which should be called "study." Intellectual appreciation, given only at the expense of research and analytical thinking, at least as far as children are concerned, is generally confined to factual material and to the work type of reading. It seems better to think

of recreatory reading as ordinarily separate, in practice at least, from purposive study.

Oral reading little used in study. — It also seems quite clear from the analysis of the uses of reading in life which were listed in Chapter II that oral reading, as such, has little place in study. Except when the reader is asked to commit to memory certain facts, principles, poems, or prose selections for the purpose of reciting those facts, principles, poems, or selections later, it appears that there is little justification for oral studying. This is contrary to tradition, it is true. Irving tells us that the pupils in Ichabod Crane's school could be heard half a mile away when about their studying and reciting. In schools of a generation ago, the children at their seats were often quite as busily engaged in oral study as the children in the front of the room in oral reciting. Many students still recite to themselves with obvious lip movement the materials which they have been assigned for study. This, however, is acknowledged at present to be a misuse of oral language. Study, having for its object the mastery of thought, or the solution of a problem, is primarily a silent process. Oral reading becomes then a tributary to study chiefly in the primary grades in which children are learning to pronounce words and to master speech mechanics.

Reading must not usurp the place of direct observation. — A school in which no learning takes place except that which is gained from books is conceivable. Even though such schools exist, it is now widely advocated that the process of learning should not lead to study

of books alone. As was suggested in the last chapter, there is need for more training in study as observation. An example of a nation that has confined most of its study to the reading and memorizing of written records is found in China; and it is well known that China made small progress intellectually, socially, or economically until the recent development of a more modern kind of education. Bookish education may easily lead to a slavish attitude of mind and an inability to think independently. The man who is well trained in books but impractical in everything else has long been a comic character. Education can easily have too much of reading.

The highest form of study is done independent of reading, or with reading only an incidental factor in connection with the recording of thought. When a man skilled in the use of books has a mental problem and attacks it by himself with no reference to the printed word, he has become an independent and self-sufficient being. The finest flower of education comes in original thought that begins where other people have left off and creates a new idea.

Reading as the tool and servant of thought. — Reading is the tool and servant of thought and not its master. Reading in the school must be a means toward an end and not an end in itself. The teaching of reading has only one major justification, and that is its use. If reading leads to the mastery of ideas and the using of ideas in controlling conduct, it then justifies itself. But if reading as such gets in the way of thought, and becomes merely a mechanical thing, it loses its right

Chart II

CHARACTERISTICS AND MATERIALS OF RECREATORY AND STUDY TYPES OF READING COMPARED WITH THOSE OF NONREFLECTIVE AND REFLECTIVE-ANALYTICAL STUDY

RECREATORY READING	STUDY TYPE OF READING
a. Characteristics Purposive Nonproblematical Observational Sensorial Associative Emotional Lacking drive Appreciative Receptive	*a. Characteristics* Problematical Highly purposive Reflective Analytical Associative Nonemotional Appreciative — intellectual Highly driven
b. Materials Periodicals and current fiction Belles lettres.	*b. Materials* Books, maps, diagrams, current periodicals, generally highly factual material.
NONREFLECTIVE STUDY	**REFLECTIVE-ANALYTICAL STUDY**
a. Characteristics Purposive Nonproblematical Observational Associative Nonappreciative Unemotional	*a. Characteristics* Problematical Highly purposive Analytical Reflective Assimilative Highly driven
b. Materials Objects Events Processes Books Maps, diagrams Systems of facts Skills Generally factual material, but at times belles lettres.	*b. Materials* Objects Events Processes Books Maps Diagrams Abstract mental problems Generally factual content, but at times belles lettres.

to a place in the lives of those who believe that the ultimate purpose of education is to make the individual free from textbooks and masters. The purpose of recording thought and experience in the form of printed words is not that mankind may be enslaved and that thought may be stagnated, but that it may ultimately become free, progressive, and on a higher level.

A chart showing reading-study relationships. — The characteristics of reading of the recreatory and work type in relation to study of reflective and nonreflective types may be shown more clearly in the form of an analytical chart which is introduced on page 122 as Chart II. This chart considers recreatory reading and nonreflective study as similar in character and work reading and analytical or reflective study as possessing similar characteristics. The characteristics and the materials used are suggested.

SUMMARY OF THE CHAPTER

From the foregoing discussion it must, then, appear that study may deal either with the concrete, objective things of the world, or it may deal with mental problems alone, and lie in the realm of the abstract. The chief characteristic of study is that it is purposive mental work. While it may involve observational learning, practicing a skill, associative learning or memorizing, or reflective thinking, it is characterized by purpose and drive. When the act is purposive it becomes study; when it is nonpurposive it is receptive learning, or the recording of sense impressions and experiences. This distinction between study and

nonpurposive learning is most important, for it gives to the term "study" a clear-cut meaning and enables the thinker to know when the act of study takes place. Purposive mental work is study. The act rises to its highest point when it becomes reflective, analytical thinking.

The activity called study may occur in the presence of concrete situations involving objects, events, and processes. It is not necessary that it deal with books or printed material of any kind. It may consist of observation, experimentation, memorizing of language heard rather than seen, the solving of mechanical puzzles, or the solution of a mental problem. The act may be performed by the unread man as well as by the read. Instead of regarding study and reading as synonymous terms, therefore, it seems well to note that reading may or may not constitute the major activity of study. It may be *a form of study*, *an act of study*, *a type of study*, and *a tool of study*, but it is not a term interchangeable with study. We may, then, speak of the reading type of study, or the work type of reading and be clearly understood as meaning that type of study which involves the presence of books as the objective materials employed and the act of reading as the mechanical and interpretative processes employed in order to assist in the purposive mental work. The *reading type of study*, therefore, is but one of the types of study and it is well to realize that teaching children to read is teaching them to study in only one of the ways in which the term may be interpreted.

SUGGESTIVE PROBLEMS

1. How many different kinds of reading can you enumerate?
2. Explain how each is used in study.
3. What is the place of reading in the study process?
4. Give some illustrations of study which involve strict adherence to the text?
5. Give an example of a type of study which requires little reference to textbook.
6. Enumerate objectionable practices in your own work with books.

SUPPLEMENTARY READING

1. EARHART, LIDA B. — *Teaching Children to Study*, Chapter IV. Houghton, 1909.
2. LYMAN, R. L. — *The Mind at Work*, Chapters I and IV. Scott, 1924.
3. STORMZAND, M. J. — *Progressive Methods of Teaching*, Chapter IV. Houghton, 1924.
4. WHEAT, H. G. — *The Teaching of Reading*, Chapter XVI. Ginn, 1923.
5. WILEY, J. A. — *Practice Exercises in Supervised Study and Assimilative Reading*, Chapter I. J. A. Wiley, Iowa State Teachers College, Cedar Falls, Iowa, 1922.

CHAPTER V

An Analysis of the Uses of Specific Reading Skills in Study Situations

Need of more specific analysis of uses of reading skills in study situations. — In Chapter II reading was shown as a very complex activity which involves the use of specific abilities. In Chapter III, study was analyzed to show that in certain situations it becomes a reading activity primarily. Since reading and study are so intimately related in the schoolroom, it seems desirable to go into more detail at this point to show how reading skills are used in study.

A preliminary treatment of this problem was suggested in Chapter II. In Chart I, it was shown that the four rates of reading — skimming, rapid reading, normal reading, and careful reading — are used for specific purposes in both work and recreatory situations. The study situation is primarily concerned with work. The discussion turns, then, to a consideration of how skill in rate, comprehension, organization, and retention contribute to success in study.

It must be noted that the purpose of such an analysis is to reveal how study may be improved through specific attention to reading skills. Skill in proper use of the typical rates of reading, skill in comprehension, organization, and retention of materials used in study,

may thus be separated from the complex called reading and considered in detail. The improvement of these skills, attacked as a separate problem, or series of problems, will be reflected in improvement in study involving books. It is difficult to see how study as reading may be improved to any great extent without a knowledge of the specific uses of reading skills in study. This discussion will serve to introduce the specific development of study skills as treated in Chapters XII–XV.

Specific study situations and rate in reading. — The changes in rate of reading in study involve the four types of rate of speed mentioned in Chapter II; namely, those used in skimming, rapid reading, normal reading, and careful reading. These rates vary in accordance with the purposes for which study is carried on and with the difficulty of the material that is encountered. The purpose may be to get only a general idea of the material presented on the printed page, or to master its content in detail. Reading rate may be slow and unwieldy because of poor training or because the reader is unconscious of the importance of good rate. This can be avoided by good teaching.

1. *The skimming rate.* The skimming rate of reading is used by skilled readers in study when the following purposes guide the study:

a. When the reader desires to get merely a general idea of the material in order to decide whether or not it may be of value to answer a question or problem that has been set as the aim of study.

b. When the reader is running down data on a ref-

erence that has been given in a bibliography or elsewhere. This occurs often when much material is available and the students are given problems to work out through reference reading. The reader may use the index if one is available, or, without it, he may rapidly skim through the body of the material searching for the desired information, reading chapter and paragraph headings, and rapidly running the eye over pages to see whether or not the material is located on a particular page.

c. When the reader is attempting to get an idea of the essential organization of an article or chapter for the purpose of outlining or summarizing the content.

d. When the student is merely browsing through books with no specific purpose but rather with a feeling of general interest in the subject and some curiosity as to what the material contains.

e. When the reader wishes to make general comparisons between the work of one writer and another. In this case, he may rapidly skim first one article or chapter and then another until he decides which he wishes to use.

2. *The rapid reading rate.* The rapid reading rate is used when the reader wishes to cover every line of print but not to weigh carefully each thought, nor to spend a long time in doing the reading. One uses this rate automatically in reading material that is familiar or simple. The specific study situations in which rapid rate is or should be used, as analyzed by the writer, are:

a. When the reader desires to review material already familiar.

b. When the reader is working under time pressure in order to accomplish the most possible in the least amount of time.

c. When the reader is desirous of comparing the statements of one author with another but in a more careful way than suggested in (*e*) under *The skimming rate.*

d. When the reader is desirous of comprehending the main thought of the writer but without the details.

e. When the reader wishes to search for the details more carefully than in the rapid skimming rate, as when reading rapidly introductions and running heads in order to get at the more important material contained in the body of an article or chapter.

The above illustrate some of the specific situations in which rapid rate of reading is a useful tool. Here again the situation must be prepared for by specific suggestions and training. The teacher may very well direct younger pupils to use either the skimming, rapid, normal, or careful rate when making an assignment, until they come to use rates appropriate to material in a natural way.

3. *The normal reading rate.* The normal reading rate is, of course, that which the reader uses in situations which ordinarily confront him. It may be slow, fast, or extremely fast, depending upon the mechanical habits of the individual, his maturity and training. The individual's normal rate is used—

a. When he is under no particular time pressure.

b. When the material is familiar and presents no mechanical or other difficulties.

c. When the reader wishes to master the details as well as the main thought.

d. When the reader is comparing the work of one author with another but not analyzing or criticizing the material.

e. When he is reading to answer simple questions or problems.

f. When he is reading to find whether or not the material contains any ideas that are new to him.

The normal rate of reading for most individuals is too low and should be improved by practice. It is to be noted that individual differences in rate of reading are so great that what is normal for one reader is a rapid or skimming rate for another. Teachers should attempt to develop efficiency in reading by increasing the normal rate to as fast a pace as is possible without injuring comprehension.

4. *The careful reading rate.* The careful reading rate is commonly used by immature students regardless of the nature of the task which is set for them. Teachers have impressed upon their minds the necessity of being thorough and as a result they plod through material which ought to be scanned or read rapidly. The following specific study situations involve careful reading as a skill:

a. When material is recognized as of great importance.

b. When material is replete with difficult ideas, terms, and facts.

c. When the critical attitude has been purposely assumed; that is, when the instructor or the situation

has required that reading be done for the purpose of evaluating the worth of the material for certain specific purposes.

d. In problem-solving, when students are considering the suggestions of a writer which may present tentative solutions to their problem.

e. When the reader is analyzing a problem, as in arithmetic, in order to find out what is to be solved.

f. When the reader is comparing style, diction, and figures of speech used in one selection with those used in another.

g. When the reader is attempting to appreciate the full beauty of thought in a selection which he is reading.

h. In translation of foreign languages where the meaning of words, phrases, and idioms is in question.

i. When evaluating the validity of conclusions in the light of the evidence offered.

The above are doubtless only a few of the study situations in which skill in careful reading is involved. The classification may at times be somewhat mixed, but until a more scientific analysis can be made, these suggest typical study situations in which the child would profit by definite training in speed of reading. Skill in this type of reading need not be left to chance.

Specific study situations and organization in reading. — Certain types of study, particularly, involve organizing ability in reading. Organization includes both analysis of the ideas in a selection that has been or is being read, and the synthesis of these ideas, or putting them together again in the same or different form. Hence, the following study situations may be improved

through specific attention to organizing ability and the use of organization drills such as suggested by Alderman[1] in his experiment in Indiana. Such training may include exercises in outlining, summarizing, and the like. Organizing ability is particularly important —

1. When the assignment is to outline the main point. This involves the ability to select the main points and to disregard the minor details. It is needed by students in gathering materials for problem-solving. Chapters of particular importance are more easily mastered when the main points are outlined.

2. When an important article or chapter is to be briefed. This involves locating the main points and the supporting details. Such a practice involves organizing ability to a high degree and the use of the careful rate in reading. Practice in this type of work and specific training in it will improve many study situations.

3. When the purpose is to summarize. This is a frequently used practice and involves organizing ability plus language ability, or ability to state succinctly the main ideas of the selection read. The summary may be mental or written. Germane[1] showed that efficiency in mental summarizing as a device in study is better than straight rereading. Since rereading is a common practice, training in summarizing, which involves sensing the organization of material, would effect results in a desirable manner.

4. Reading to gather ideas for original composition. In this case organization is highly important. The

[1] *Op. cit.*

student must not only analyze but he must also recombine the ideas gathered and express them in his own words. It is therefore of great importance that his reading be very accurate. Training in reading in this situation would promote economy and make the recombining process much more efficient.

5. When the purpose is to evaluate the important ideas, paragraph headings, topic statements, or other parts of the material read, organizing ability must be exercised in picking out these parts for evaluation.

The ability to organize is closely linked up with the ability to comprehend and it is impossible, or at least difficult, to find a situation in which comprehension is clearly separated from organizing ability. It is probable that these two factors, with retention, are never present separately, but that, at a given moment, one predominates in the reading act, and at other times one of the others. Thus one may be assigned a task of outlining a lesson; he can do this with a minimum of attention to remembering the material and at times with little comprehension. Again, after reading, he may strive to recall certain ideas or words with a minimum attention to the general organization of the article and with comprehension of the words not the main consideration. Thus organizing ability at times assumes the place of first importance in thought-getting and in certain study situations it is the most important factor.

Specific study situations and comprehension in reading. — Study situations in which understanding of material that has been read is a matter of chief importance are more common in our schools to-day than ever

before. We have said, for a generation, that memorized facts must give way to power to think and to practice in thinking. The present emphasis upon thinking in connection with silent reading instruction is helping to promote this modern aim. It is of little value to say that comprehension is the *sine qua non* of effective study. The following are situations in which comprehension of the material read dominates the study situation:

1. When the ideas of a selection are being examined to determine whether they are of use in solving a problem.
2. When words are being studied in order to know what their particular meaning is in a particular setting.
3. When phrases and sentences are being examined to see what their relation to the context may be.
4. When directions are being followed, as in doing an experiment in chemistry, drawing a figure in geometry, or making a model in manual training.
5. When an article is being read for the purpose of evaluating it rather than for merely committing the expressed ideas or words to memory.
6. When titles, paragraph headings, and other divisional headings are being evaluated as to their appropriateness in the light of material presented to support them.
7. When the object is to experience an emotional reaction from a poem or prose selection rather than to memorize its content.
8. When comparisons are being made between the accounts of different writers of the same event or of the same fact.

9. When narratives are being read for the purpose of enjoyment. (Comprehension of the essentials of the plot is a necessary condition of the enjoyment.)
10. When literature is being read for the purpose of appreciating beauties of diction and use of figurative forms.
11. When mathematical problems are to be solved.
12. When outlining, summarizing, or other forms of organization are required.
13. When the reader is following the directions on an intelligence or achievement test, or preparing to work out stated problems in a textbook or outline.
14. Wherever pure memorization is not the object of study.

From the above analysis it appears that there are many situations in study in which comprehension of written language is of first importance and constitutes the first step in the study process. That these situations are specific and that the child can be trained to use effectively the skills needed for successful accomplishment in these situations will be shown in later chapters in specific suggestions for developing study ability.

Specific study situations and retention in reading. — It has been shown that retention, while a factor in silent reading of whatever sort, is also a factor in thinking, or study not involving the use of books. Without immediate memory the individual would be incapable of any thought. With a faulty memory for facts, either immediate or delayed, the individual must be incapable of connected thought and inefficient in all

mental work. The problem here is to suggest in what respects retention becomes important in the reading type of study. The following are suggestive of many opportunities for the teacher of reading:

1. When the student is seeking to understand meanings of words, phrases, and clauses, as described in the section on comprehension, memory is involved. His memory must be exact in regard to the previous associations these words have had in his mind. Unless he has had adequate training in comprehension he will be unable to retain accurately these previous associations.

2. When review in written form is a part of study, memory is exercised particularly. Specific training in review of reading materials will therefore function in the improvement of study of this sort by making memory more accurate.

3. When the student is seeking to comprehend the ideas of any selection, memory of past experiences that throw a light on the meaning of the present ideas is an essential condition of successful comprehension. A broad contact with many kinds of reading material is a necessary background for the understanding of new ideas. Retention of this experience is an essential factor in successful study.

4. In study situations, it is sometimes necessary to remember the main ideas rather than the details. Specific drills in remembering the main ideas in reading will give skill in this ability in the study situation when the situations are similar.

5. In some study situations specific memory of verbal associations are sometimes necessary. The

necessary laws for successful verbal memorization can be observed in specific reading exercises and the child taught how to use this skill to best advantage.

6. When a study assignment is in the nature of problems to be solved which depend upon the memory of material that has been read previously, it is clear that the efficient reading and memorizing of that material is the first essential to the successful performance of the assignment. Skilled reading and memory of what has been read will be assured when greater emphasis is placed upon the importance of comprehension and retention of materials in all exercises in reading, and upon ability to select the main ideas, evaluate, and assimilate them. When careless reading is encouraged in the reading period, it cannot be expected that children will immediately become careful readers in a study situation involving books but not under the direction of the teacher of reading. One of the best means of providing for good memory is to see that it is exercised in every reading and study situation and that the child knows the importance of the laws of memory and observes them:

Retention is thus shown to be important in many specific study situations of the reading type. Unless the child has been trained to remember what he has read and to draw upon past experiences, he must fail in many types of study. The emphasis placed upon retention by many teachers is not badly placed, unless retention without understanding is encouraged.

Specific study situations and skills in handling books. — That there are situations in study in which

knowledge of and skills in using books are important will be at once acknowledged by all who regard study as other than the reading and memorizing of a single textbook. Knowledge of books and skill in using them are important:

1. When the student is using the problem method of studying a subject.
2. When supplementary reading is required.
3. When papers are required which deal with a subject in an exhaustive way.
4. When the student desires to get more than a single author's view of the subject.
5. When words, terms, and definitions are in doubt and need further clarification.
6. When an answer to a problem or question cannot be found in the textbook.

The particular skills needed in these situations have been mentioned before in a discussion of manipulation in Chapter II. The use of books in study will be developed more fully in Chapter VII.

SUMMARY OF THE CHAPTER

That there are specific study situations which involve the five factors in silent reading in very definite ways is shown in this chapter. The developing of those reading skills will improve certain types of study most directly. Efficient use of rate in reading, good ability to organize, comprehend, and remember, will result in immediate improvement in the reading type of study; and by means of the practice of these skills, the mind

may be furnished with ideas for study situations in which books are not immediately and directly involved. The first step in the process of improving study in the schools would therefore seem to be to make an analysis of the specific things which children do when they study, to ascertain what reading skills are involved in these study situations, and then to train these skills specifically and see that they are used. When this is done, a large number of study difficulties will disappear. Study cannot be greatly improved by a general attack upon the problem of motivation and interest until children have the necessary technical skills in their possession to improve the reading act as it is exercised in study.

SUGGESTIVE PROBLEMS

1. Show how the improvement of study, direction of study, and kindred problems might yield to an attack upon the improvement of reading ability.

2. What situations in study would not be affected by training in silent reading skills?

3. Show by approximate figures how much time you could save yourself in your study if you could read twice as fast as you do now.

4. Of the five factors in silent reading that are discussed in this chapter, which is the most important in study?

5. Would you practice memorizing poetry or nonsense rhymes if you wanted to improve memory for the main ideas set forth in textbooks? Give your reasons.

6. What is meant by "transfer of training" and how would it be involved in the discussion in question 5? If you trained children to read well in their readers, would they necessarily read well when assigned a lesson in arithmetic or geography?

7. In what situations would you train pupils to outline? How can you teach children this skill in history and geography lessons?

8. Why would it seem wise to make the silent reading period a time for the development of skills in reading and to exercise these skills largely in the study periods in other subjects?

9. What has been the effect of subject organization in our elementary schools upon the transfer of reading ability from the reading period to the history, geography, literature, and other periods?

10. What arguments can you see here for making the teacher of reading responsible for efficient exercise of reading skills in other school situations?

11. Give arguments to the effect that the teacher of reading must be the teacher of all other subjects in the curriculum that involve reading. Give arguments to the contrary.

SUPPLEMENTARY READING

1. Boraas, Julius. — *Teaching to Think.* Macmillan, 1922.

2. Lyman, R. L. — *The Mind at Work,* Chapters IV, V, VI, and VII. Scott, 1924.

CHAPTER VI

Methods of Study and Methods of Reading

Methods of study both general and specific. — Methods of study, as discussed in various books for teachers and in a very few books intended for the use of students, are both general and specific. They include a considerable number of methods of study appropriate to a variety of study situations and a smaller number appropriate to specific study situations. The general methods suggested are more plentiful because specific tasks, such as are found in the study of arithmetic, history, or geography, have not yet been fully analyzed. That each situation presents problems of a somewhat different character is clear; but just what these differences are in detail are not known. Much investigation must take place before we can be sure as to what extent even general suggestions for effective study apply to specific situations. In this chapter an attempt is made to suggest some general methods which apply to the reading type of study.

Methods which concern teachers. — There is one phase of the discussion of methods that has to do with methods by which teachers may lead children to study. The teacher is concerned with how to get the child interested, how to keep him at study once he has been started, and how to get him to use effective methods

of work as he proceeds. The nature of the child's needs, the instincts which may be called into play to get him to exert himself, and the application of the mind to learning are involved. Such problems are properly the subject of discussion in courses in the psychology of learning. They are treated incidentally in Chapters XII–XV.

Methods which concern the child primarily. — The aspect of method in study as it concerns the child has to do primarily with the problems of how to get interested in study, how to keep at it when once started, and how to proceed when started in order to get results. The questions *Why study at all?* and *What shall we study?* are also involved in the general problem. Attempts to give the child the necessary information to answer these problems have been made by Foster in *Should Students Study?* by Sandwick in *How to Study and What to Study*, by Dearborn in *How to Learn Easily*, by Kitson in *How to Use Your Mind*, by Whipple in *How to Study Effectively*, by Book in *Learning How to Study and Work Effectively*, and by others.

General methods should refer to all types of study. — General methods of study should refer to the general laws of learning and have application to most, if not all, of the types of study. Whether one learns by observation, by practice or drill on a motor process, by memorizing oral or written language, or by problem-solving, there are some general principles that effect learning. Among these principles of procedure, which may be called general methods of study or learning,

the following have been listed in a form suitable for the understanding of older children:

1. Always know what you are to study before you begin; *i.e.*, have a clear idea of the problem or task.
2. Rely on yourself when studying; do not ask others for aid unless you must. You have to study by studying.
3. Work with a will while you work; do not be half-hearted about it. Half-hearted work does not get results.
4. Have a definite time to study each lesson each day.
5. Have a definite place in which to study, with good light and air, and conveniently arranged materials. When you study at home, it is well to have a room to yourself if this is possible.
6. Believe that you can do the work which has been set.
7. When you have worked a while, you are "warmed up" to the task. Do not stop until you have accomplished something definite. It is economical to work when you are warmed to the task.
8. Stop at a good breaking-off point. The paragraph, section, or the end of a chapter is not always a good breaking point. You should finish a unit of work, if possible.
9. Do not worry and fuss as you study; worry cuts down on efficiency. Fussers do not live long.
10. Review your lesson briefly before the recitation, if possible.
11. With material which you wish to retain for temporary purposes, you may concentrate your study in long study periods; if you wish to remember

the material for a long time study for a shorter period each day for several days.

12. Review at regular intervals — review the old lesson before you begin the new.

These and many other suggestions or rules refer to study of many types. They are written chiefly for children in the upper grades or the secondary school where the child studies at home or has a study period independent of the recitation. They need modification for the lower elementary grades.

The relation of these general rules to the reading type of study. — Obviously these general rules have to do with the reading type of study primarily. It may be said that they were made with textbook study in mind. As general rules for the work type of reading they are excellent and should be taught in some form to every student. As a rule, however, they have been taught too late. Students in high school have already formed habits of reading which are hard to break. These laws should be developed in simple language with children in the grades. The accounts of study procedures given by students as reported in Chapter III do not show command of these principles of procedure.

It may be said that children are taught how to master the mechanics of the printed page but that they are not taught to read for specific purposes. The mastery of the rules in the preceding section will not give the child a mastery of the uses of reading in obtaining his objectives. This is a kind of method in study that has not been investigated in sufficient detail

to give teachers information as to what to teach the child. Methods of reading in study may be said at present to be largely straight reading and memorizing of thought. The child confronted with the task of studying the printed page, proceeds as best he may, hitting upon such methods as occur to him. Such a procedure is very expensive of time and effort. General rules of procedure are insufficient.

Reading in learning a skill. — The child is confronted with such a task as practicing his lesson in handwriting or in drawing. In the one he is reading words and sentences in script, in the other he is observing an object or a drawing and is endeavoring to make a correct copy. There are here two different situations, but in both of them the child is learning a motor process. In the one reading is a factor; in the other it is not. Accurate reading is essential in a very simple way in the first; the child must read the words correctly, observe their form, assume the correct position, and practice the formation of the letters and words with the correct movement. Reading has served him as a basic tool. In the other situation reading, except as reading the lines in the drawing, does not function. Yet there are certain methods of work which are essential if the child is to learn economically.

Reading in the skill situation is generally a basic tool. Methods of using this tool in this situation are insured by correct teaching of the mechanical skills in reading. The child may be said to center his attention on the outcome of the process and not upon the tools he is using; yet the importance of reading as a method of

procedure is often great. The child should be taught to observe accurately and to check his observations at every step.

Principles which apply in the skill situation may be summarized as follows:

1. Know what you are to practice.
2. Get a correct start.
3. If you are practicing from copy, as in handwriting, be sure that you are reading the copy correctly.
4. If you are observing an object, be accurate in your observations; take time to see clearly all characteristic things about it.
5. Keep in mind what you are aiming to accomplish rather than how you are to accomplish it.
6. Practice in the form in which the skill is to be used; *i.e.*, practice spelling by writing; declamation by declaiming, etc.
7. Practice frequently for short periods rather than infrequently for long periods.
8. Ask your teacher to criticize your work frequently in order that you may know whether you are working properly.
9. When you are in doubt about how to proceed, ask your teacher to show you how rather than proceed without a correct idea of what you are to do or how you are to do it.
10. Compare each piece of work you do with each previous piece to see if you are improving.
11. Ask your teacher to point out where you can make improvement and then practice on the points she suggests until you have improved your work.

12. Do not practice until you are worn out; stop before you get worried or flustered about your work.

The above rules of procedure are general rules for learning a motor skill and are stated in a form suited for the fourth grade, or above.

Reading and memorizing. — A large part of the memory work which children are asked to do in school has to do with reading in the initial stages of the process. Printed words are the *form* in which the material to be memorized occurs, and reading is the *tool* with which this material is to be mastered. In memory work, memorizing from a verbal copy is not practiced to any large extent except perhaps in the primary grades. The first essential in correct memorizing from written copy is accurate reading of the copy and comprehension of what it contains. Material which has no significance may be memorized, it is true, but meaningless material is far more difficult to memorize than that which is meaningful. The rules of procedure which have to do with memorizing may be stated thus:

1. Be sure you understand what and how much you are to memorize before you begin.
2. Read the material through and try to understand what it means before you proceed to memorize it.
3. Memorize short selections as wholes rather than as parts; that is, begin at the beginning and read the selection through from beginning to end rather than line by line or sentence by sentence.

4. Memorize long selections by sections which have a single general thought; then later memorize the connections between these sections.
5. If you wish to remember a selection for only a short period, you may memorize it in several long periods of work; but if you wish to learn it for permanent use, memorize it in shorter practice periods spread out over a longer time.
6. Review frequently the material that you are memorizing.
7. If you are memorizing ideas, rather than words, be sure to state the main ideas in your own words. Make your own illustrations from your own experiences. Review these ideas in your own words at the end of each practice period; then look over the material to see that you have understood them accurately.
8. Outlining an important selection is a great aid to memorizing it.

These rules need simplification for younger children. Their meaning should be developed by concrete examples.

The reading, collecting, organizing, and recording of ideas. — In a large part of the study that the child is called upon to do, except in direct observation in the laboratory and of nature, he will be asked to collect ideas from the printed page. There is, of course, a tendency to-day to have children collect information from many sources that are not connected with books. The methods of study which have to do with collection, organization, and recording of ideas have, nevertheless, a primary connection with reading and may be called methods of reading.

Methods of procedure in such situations have been very inefficient because of the tendency to study and memorize textbooks. Now, however, in the social studies particularly, the library method is securing wider application and methods of using books and reading materials of different kinds, located in different places, are important. The child should be furnished with definite methods of procedure for

1. Collecting material for various purposes.
2. Selecting material for these different purposes.
3. Outlining, summarizing, and otherwise recording such materials.
4. Organizing the materials so selected for various purposes.
5. Reporting the ideas so collected.
6. Retaining these ideas for future use.

For the above general purposes the child must be furnished with a large number of detailed methods of procedure. These detailed methods are not generally taught at present chiefly because many of them have never been distinguished from general ability in study and because teachers have not been made responsible for teaching them.

In the following sections an attempt will be made to suggest some of the types of detailed treatment which must be taught in the effort to train children to read for study purposes. The methods are appropriate for children in the fourth, fifth, and sixth grades and above; and may be simplified for the lower grades. They are intended as suggestive only.

Method of reading accurately a single textbook lesson or brief reference. — The accurate reading of sentences and paragraphs in a single short selection is, of course, dependent upon the power of comprehension and organization which have been developed by the teaching of reading in the school. The child may be made conscious of certain methods of procedure, however, which will serve to make him exercise what he has learned in incidental reading exercises when he is faced by a problem of mastery of content in some other subject. It is suggested that he be instructed somewhat as follows:

1. Do not pay attention primarily to reading the words, but seek to master the thought of the author.
2. As you read the selection paragraph by paragraph, attempt to picture what the author's words mean.
3. Try to remember what you have seen, read, and heard about this subject in order to make the words of the author have clearer meaning.
4. If you are bothered by a strange word, try to understand what it means from the setting in which you find it; *i.e.*, from the words on each side of it.
5. Try to supplement what the author says by giving additional illustrations or details from your own experience or from other reading which you have done.
6. Ask of each paragraph, "What question does this paragraph answer?"
7. Try to summarize the thought of each paragraph in your own words after you have read it; *i.e.*, state the main point clearly and effectively.

8. When you have read the whole selection, then summarize to yourself what you have learned.

Methods of getting a general idea of a chapter or section. — The method of getting the general idea of a chapter or section is often necessary in study. Suggestions similar to these may be given the child:

1. First look through the chapter or section rapidly, reading the main heading and the paragraph topic sentences. [The teacher should explain the latter, if necessary.]
2. Decide which portions of the chapter seem most important.
3. Return to these portions and read more carefully.
4. Summarize what the chapter has said and if you think it important, make a brief outline of the content.
5. Read the chapter again rapidly to see whether you got the right ideas the first time. Neglect the details and pay attention only to key sentences and paragraph headings.
6. If the chapter is to be discussed in a general way, look over what you have written immediately before going to class.

Method of mastering an important chapter or selection. — Certain materials in textbook form and some supplementary materials are important enough to require thorough mastery. The student should be instructed in how to study for mastery:

1. Read rapidly through the chapter to get a general idea of its importance and of the plan which has been used in writing it.

2. Pick out the points of most importance.
3. With these chief points in mind, read the chapter carefully to master it, noting how the author makes the main points clear.
4. Wherever you can, add to the ideas of the author and give illustrations of your own.
5. Now outline the chapter rapidly. Give enough of the details to help you remember what the main points mean.
6. Look over your outline with the textbook open and correct any mistakes you have made.
7. Before the discussion of the lesson, look over your outline again.

Method of getting the main point. — Children should be taught how to separate the main idea in a paragraph from the details. Study of the paragraph from this point of view should be begun in the early grades. Even older students will profit from such directions as follows:

1. The main point of the paragraph is generally found at or near the beginning. The sentence in which the main point is found is called the topic sentence, or statement.
2. It may often be found again near the end in another sentence. This sentence is called the summarizing sentence.
3. To get the main points of an article without reading all the details, read the paragraph headings and topic statements carefully and then glance rapidly over the remaining details, noting only the key words in the sentences.
4. Compare the topic statements and decide which introduce the main point of the article, which

express the main point, and which help to make the main point clear.

5. State the main point or points in the form of the series of topic sentences which express them.

Method of collecting ideas from a series of references. — When the child is faced with the task of reading several references in order to answer a question or a problem, a series of suggestions as to method of procedure such as the following might be of help.

1. With your problem in mind, select your reference book and look in the index to find whether or not the topic of your problem is mentioned.
2. Locate the correct page and turn to it.
3. With your problem in mind read the section indicated and decide whether or not it contains any information on your topic, or problem.
4. If your task is a long one, write down in your notebook whatever information the section has on your problem, or briefly summarize the thought on a sheet of scratch paper.
5. Now turn to the second reference and proceed in the same manner. Write down whether or not this reference adds anything to the first one.
6. When you have looked up all the references, then, with your problem in mind, list in outline form what you have found, giving the references by page.
7. Now study your outline and memorize it for use in the discussion of your problem.

How to take notes. — Modern study requires more note-taking than older methods. The recording of collected information in an accurate manner is an im-

portant part of the study process. Recording is so linked up with reading that it seems a part of the process; accurate reading, however, is basic to accurate recording. The student may be aided in note-taking and prevented from costly experimenting by definite training.

1. *Making an outline.* Making an outline is necessary when the material is of great importance or when one is collecting material from several sources for definite purposes. To make an outline of an article proceed as follows:

a. Read the article through once rapidly, noting the main points of each paragraph.
b. Decide upon the main headings for your outline from this first rapid reading.
c. Now set down your first main point. Read that section of the article which has to do with this main point; fill in details.
d. Now proceed to fill in the other main sections of your outline in the same manner as in *c*.
e. Remember that an outline is a skeleton only of the material of the article which you have read; do not fill in too much but suggest the main ideas and the chief details only.
f. When you have finished outlining, compare the outline with the original article to see that all is correct.
g. The making of this outline should have given ample preparation for discussion of the article.

2. *Making running notes.* The making of running notes is sometimes desirable when the material is of great value. Running notes consist of sentences, and parts of sentences which give the essential content and also show something of the author's style and diction.

In making running notes the child might be instructed to proceed somewhat in this fashion:

a. Read the material paragraph by paragraph, picking out the topic statements in each paragraph.
b. Write down these topic statements, or an abbreviation of them; fill in such other statements as are needed to add to the meaning of the topic statement.
c. When you have finished reading the selection you should have a fair set of running notes.
d. Use this method when the material is not easily available and cannot be read again.

Organizing materials for new purposes. — Often the child will be faced with the task of organizing for new purposes materials which he has collected. He will be required to answer a new problem which is covered by material already collected but he will have to review the material to answer the problem. Suggestions as to method of procedure might include the following:

1. With the new problem in mind, run rapidly over the references you have previously read, noting where the material touches the problem.
2. Neglect the portions of the material which do not throw any light on your problem.
3. Jot down the references to the problem.
4. Review these references and decide how they apply to the problem.
5. Make a statement of the answer to your problem in the light of the references you have collected.

Methods of reporting. — The oral or written report may be the result of a great deal of reading and study.

Material may be collected as suggested in the preceding sections. The making of the report, however, involves some special problems which the child should be taught to attack effectively.

1. In order to make a good report you should make a careful outline.
2. Decide on how you are going to open your report and set down a few suggestive sentences. Call this "the introduction."
3. Now decide on the body of your report. In your mind, arrange the points you wish to emphasize in order of their importance, leaving the most important point to the last. Make an outline for the body of your report from these materials, listing under each main point the main facts found in each reference and the illustrations that you want to use.
4. Decide now upon how you will end your report and outline briefly the ending, which is generally made up of the conclusions you have drawn from your material.
5. If your report is to be given orally you may not need to write it out; but if you have to give a written report, start now with your notes, books, and papers all conveniently arranged to write your report. When you write, state what you have learned in your own words.
6. When you have written your report, read it over several times to fix the main ideas in mind and to see whether or not you have said what you want to say.
7. If you are to report orally, give your report aloud at home so that you may deliver it easily when you are called upon at school.

These suggestions are given merely to outline in a general way the manner in which procedure in reporting should be detailed to the child. The younger the child the more simple and detailed the instruction should be.

Reading and problem-solving. — The collection, organization, and reporting of materials is generally involved in problem-solving unless the latter be in the nature of a written, mechanical, or mental problem which requires only reflection for its solution. The modern tendency to teach social studies by the problem method makes accurate reference reading a necessary prerequisite to these studies. In the reading which is done in the effort to solve a problem, the child will need direction as to methods of procedure such as are suggested on page 152 under the caption, *Method of getting the main point.* General directions to the student in this type of study might be outlined in this fashion:

1. Make sure that you know what the problem is and that you understand it clearly.
2. Decide where you may possibly find some answer to the problem. What books have to do with this problem?
3. Using the indexes of different books, locate the sections that have to do with this problem.
4. Read these sections one by one, noting whether or not they answer the problem you have in mind.
5. Compare what the different authors have to say. Which agree? Which disagree? What seems to be the general opinion? Which type of opinion predominates?

6. Decide which of the authors you are going to follow; *i.e.*, which seem to present the best material.
7. Summarize what each has to say and draw your conclusion from an examination of this summary.
8. State your conclusion, noting those statements of different authors that support your position.

If the problem is a written problem in mathematics the procedure may be suggested in more definite form:

1. First read the problem to get an idea of its conditions; ask yourself, "What is given? What is to be found?"
2. Decide what method of procedure is appropriate to this problem.
3. Work the problem through mentally, as far as method is concerned, to test out tentatively whether or not you have selected the right method.
4. Now work the problem on paper, performing each operation carefully and labelling each main factor in the problem.
5. Prove the accuracy of your operations.

In the solution of a problem the reading of the problem is a very important matter. To understand the conditions of the problem is essential before operations are attempted. Pupils should be given much drill in the accurate reading of arithmetic problems before the computations are performed.

Problems of all sorts should be analyzed and proper procedures for their solution worked out with the children for their guidance, if they are to be successful in their work. The old idea of giving children a set of difficult problems to solve at home with no directions

as to how to proceed must give way to the newer idea of teaching children definitely *how to work* as well as *what to study*.

General methods of procedure in reading type of study. — There has been little investigation of general methods of procedure in the reading type of study. Such practical suggestions as are available will now be summarized briefly. A fuller discussion of the evidence behind these statements may be found in Gray's *Summary*.[1] Children may be instructed in the principles of procedure as they appear here:

1. If you are determined to remember what you read, you will succeed in it. Determination helps one to remember. You must *will* to succeed if you wish to succeed.
2. It is better to study with some questions or problems in mind than without them. You will remember more of the material you cover and remember it longer.
3. A single purposeless reading of a lesson does not enable you to learn it well.
4. Repeated readings without purpose are of little value.
5. Pauses for summarizing are effective if you know how to summarize; but if you do not know how to summarize, it is probably better to read again and again.
6. Outlining a lesson aids one to remember it.
7. Frequent review of your lessons is a sure method of enabling you to remember it for a long time.

[1] Gray, W. S. *Summary of Investigations Relating to Reading*, pp. 112–18.

8. If you wish to remember the ideas presented in what you read, it is essential to understand the thought of the author. Do not try to memorize ideas that you do not understand.
9. Tests and reviews are of great value in helping one to remember permanently the important ideas and facts in what he studies.

SUMMARY OF CHAPTER

This chapter attempts to make clear that a large number of the methods which are suggested for efficient study apply to the reading type of study primarily, since so much of school study is connected with reading. The point of particular interest to be noted here is that such methods are often totally disregarded in attempts to teach children to study. They should be incorporated in the course of study in reading in such a manner as to insure their development in the elementary school. Unless children are taught to use correct methods of reading early in their school life, they will form many bad and uneconomical habits which it will be hard to correct later. The place for the development of proper methods of procedure in study would seem to be in connection with the teaching of content subjects, but it must be done also in relation to the teaching of reading. Both formal teaching of reading skills and application of reading skills in study situations is essential. Methods of study and methods of reading must become a part of the whole process of teaching children to learn if good results are to be obtained. The relations between reading and other

study methods must be understood by the teacher and their significance pointed out to the children.

SUGGESTIVE PROBLEMS

1. Give arguments to show why it may be said that the teaching of methods of study is now largely an incidental matter.

2. To what extent are methods of reading methods of study?

3. What method can you suggest for teaching children how to study printed material economically?

4. Suggest additional directions as to specific types of work-reading other than those found in this chapter.

SUPPLEMENTARY READING

1. Book, W. F. — *Learning How to Study and Work Effectively*, Chapters XVII–XX. Ginn, 1926.

2. Dearborn, G. V. M. — *How to Learn Easily*, Chapter II. Little, 1916. (On note-taking.)

3. Hall-Quest, A. L. — *Supervised Study*, Chapters VII–VIII. Macmillan, 1916. (General methods of study.)

4. Kitson, H. D. — *How to Use Your Mind*, Chapter II. Lippincott, 1921. (Note-taking.)

5. Lyman, R. L. — *The Mind at Work*, Chapter II, Section 1; Chapter IV; Chapter V, Sections 1 and 2. Scott, 1924.

6. Thomas, F. W. — *Training for Effective Study*, Chapters V and VI. Houghton, 1922. (General methods of study.)

7. Whipple, G. M. — *How to Study Effectively*. Public School Publishing Co., 1916. (Rules for economical study.)

8. Wiley, J. A. — *Practice Exercises in Supervised Study and Assimilative Reading*, Chapters III and XII. Iowa State Teachers College, 1922. (Specific training exercises for teachers to use in developing certain abilities in study.)

CHAPTER VII

Training in the Use of Books

Importance of training in use of books. — The importance of training the child to use books skillfully has been frequently referred to in preceding chapters. Teachers and supervisors are coming to realize that children need to know how to find information as well as how to read and comprehend printed materials when they have found them. This idea first gained a place in college and secondary school teaching but has not been widely accepted as yet in the elementary school. It is becoming apparent, however, that children in the elementary school must get training in the use of books if work of the right kind is to be done in the secondary school and college. The lack of such training is, of course, due to several causes, among which are the feeling that the mastery of individual textbooks is the primary purpose of education, the belief that the use of reference books is properly the work of the secondary school and college, the reluctance with which boards of education furnish libraries to elementary schools, and the lack of training among teachers themselves in the use of books and libraries.

Good libraries lacking in elementary schools. — Although there are exceptions to the general rule, the elementary school of to-day which has a good library

of reference books is rare. It is far easier to get boards of education to invest money in school plants, athletic equipment, maps, globes, and other things that they have become accustomed to considering essential, than to get them to invest money in libraries of books and periodicals. The story of the old countryman who was approached by a book agent with an invitation to buy a book and refused on the ground that he already had a book, is not far-fetched as an illustration of the attitude of many American school officials in regard to the purchase of books of any other variety than those used as textbooks. While equipment of other sorts is obtained with a minimum of difficulty, the purchase of an adequate library is neglected or, if books are purchased, they are bought with funds raised by school entertainments, or through gifts of kindly patrons. When books are bought, the selection is often bad. Reference books are badly chosen or entirely absent. Even in the more pretentious school libraries, the shelves are loaded with material for literary reading, and books which would supplement the geography, history, science or other textbook are strangely lacking.

The need of good libraries of reference. — Libraries of reference books are much needed in the modern school. Creditable problem or project teaching cannot be accomplished without reference books. Each schoolroom should be a workshop of books. Enough money should be spent to provide, for pupils old enough to use them, a good encyclopedia, dictionary, atlas, statistical abstract of current date, and numerous

detailed and well-illustrated books related to the school subjects. These books should be consulted as a part of the regular work in order to add richness and detail to the more or less encyclopedic treatment offered in the textbook. Textbooks are outlines at best and are meant to suggest only the bare bones of the subject. Reference libraries must furnish the stuff with which to make these outlines real. There should be an adequate library of appropriate informational books in every classroom in the elementary school. Means should be taken to make such books available in plenty, in order that children may have easy access to them and not be forced to travel long distances, or in other ways consume time unduly in getting the desired material. Though many of the books mentioned above are inappropriate for primary grades, even in these suitable books of interesting detail should be furnished to give the children information on subjects interesting to them.

To be effective, training must be begun early. — The observant person who watches adults in any large library will be impressed at once with the total lack of skill on the part of many in the use of the library. Most adults of the present generation have had very little training in the use of a card catalog or a magazine index. The lack of such training has been, to a large extent, unavoidable because of the rapid industrial development in America, the opening up of new country with consequent shifting of population, emphasis upon material rather than intellectual things, and consequent lack of library facilities. Until Andrew Carnegie began to dispense his fortune by establishing

libraries, the public library did not reach the heart of America. Now things are changed. Anyone who lives near a town of five thousand people, or even less, is in reach of a library of fiction, if not of a library of history, biography, and science. Libraries will not be used intelligently, however, until people know how to use them. To secure adequate and intelligent use by any considerable number of people, training in the use of books and in the finding of information must not be put off until adulthood but must be started in the elementary grades. Habits of a fundamental sort are formed early with most people, or not at all. Fifteen years of training in reading of recreatory material does not prepare the individual for work with books.

If adults are to use books and libraries habitually in their attempts to get information and solve life problems, children must be trained to regard books as of two general types — books for information and books for recreation; and they must be given definite skills and knowledges in the use of these books. A brief training in the use of books and libraries coming at the end of the high school course, or in the first year of college, may be of some benefit to the one who graduates from high school or enters college. But what of the child who does not get that far? He will scarcely form any habits of a helpful sort in the use of books unless he is a person of exceptional ability. Moreover, even the child who goes to college will be a better user of books if he has had intelligent training in their use for a number of years. The quality of work in the elementary school is immeasurably enriched when

children are given this training from the earliest period at which it can be begun.

Some fear to confuse the child. — Some fear that training in the use of reference books will confuse the child in the elementary grades and result in inefficient or superficial work. Such is the influence of the older idea of memorized knowledge and textbook teaching. Those who fear the effect of the use of reference books in elementary geography, history, or nature study, base their fear on the argument that the child cannot be taught thoroughly by the reference method. They apparently feel that committing to memory the facts in a single textbook is the main business of the child of elementary school age, and that if several books are introduced, the teacher cannot be sure that the child is learning the minimum essentials of his subject. This, of course, is a fallacy. If proper precautions are taken to direct the reading into definite channels, guided by specific purposes, and if adequate reviews, summaries, and records are made, the child in the elementary school will profit greatly by the use of books of reference and will learn rapidly to use them intelligently in the study of his school subjects. Indeed, the work done in some of our experimental schools and in the leading public elementary schools of our cities will compare very favorably in this respect with that done in many higher schools. The child is not only not confused but his experience is greatly enriched and his ability to find materials for himself immeasurably increased. This general statement applies especially to those situations in which the child is seeking for information in answer

to specific problems or needs, as in his study of history, geography, and elementary science.

Importance of specific practice in reading. — It is, of course, obvious that such training as is suggested in the preceding pages cannot be separated from training in reading. The child must be made efficient in rapid reading with understanding before he is in a position to use books effectively. However, along with the instruction in oral and silent reading should go practice in using books for the purpose of gathering information. This means that reading must be applied for definite purposes. Many different kinds of books must be available and many specific types of training must be given. The child must learn how to read to find the answers to problems, to find new material, to compare references, and to select and evaluate material for different purposes. These specific abilities constitute *ability to read* in study situations and they demand skill in using books effectively for successful accomplishment. Reading, then, comes to mean far more than the mere teaching of the child to interpret the symbols on a single page of printed material or in a single book. Skills in reading — fundamental mechanical skills — lie at the basis of such work, but it is only in their use that such skills have any value or significance. The use of reading as a means of finding information in books comes, then, to justify the time and effort spent in training children to read.

The books used in history, geography, and other subjects must be read. To learn to read these books effectively is a special problem in reading. It should

occupy a large share of the time and engage a large share of the interest of teachers and pupils in the elementary grades. Only by specific practice in the application of reading skills in using such books will the ability to use them successfully be gained by any large number of children.

Danger of too much emphasis on book study. — It is well to remind ourselves, however, that study with books is only one form of study and that we should not overemphasize it to the detriment of other forms. Along with this training in the use of books must go training in observation, memorization, independent thinking, and in other types of learning activities already mentioned in Chapter III.

Specific knowledges and skills to be taught. — General understanding of the need for such training as is outlined in the preceding sections will not enable the teacher to develop such skill efficiently, however. Specific information as to the knowledges and skills essential in using books for informational purposes is needed. Such information is contained in a number of excellent books which have been prepared for the use of teachers. Among these, Ward's *Practical Use of Books and Libraries*, and Rice's *Lessons on the Use of Books and Libraries*[1] give excellent discussions of the essential knowledges and skills. Among the knowledges that are needed are the following:

1. How to open a book.
2. How to use table of contents.

[1] See bibliography at end of chapter for reference to both books.

3. Significance of title page, date of copyright, publisher, list of illustrations, and appendix.
4. Significance of binding, printing, illustrations, etc.
5. How to use index.
6. How to care for a book.
7. How to repair a book.
8. How to buy books.
9. Facts about authors, publishers, and book concerns.

Information about these and other matters having to do with books and their use should be disseminated among children in the elementary grades as their needs develop. This will help to give the child desirable attitudes toward the use of books and will inform him as to book values.

The school must engage in training the child to use books skillfully as well as to know about them. Training exercises should include as the child advances —

1. Use of table of contents.
2. Use of index.
3. Use of chapter headings, references, and bibliography.
4. Use of Dewey decimal system of classification.
5. Use of card catalog.
6. Use of dictionary, encyclopedia, and of such statistical abstracts as *The World Almanac*.

These and, doubtless, other skills must be incorporated in a course of study which outlines the gradual training necessary for the child to learn to use books intelligently. Many schools are now giving children special training in these skills. In the platoon schools of Pittsburgh,

for instance, a special library teacher is employed to take charge of this work. The teacher of reading, even in a small school, can add greatly to the enjoyment and use of books by such instruction.

Some desirable attitudes toward books. — The right attitudes toward books are essential for every person who pretends to be educated, yet few adults of to-day and practically no pupils have the right attitudes toward them; they are credulous of their contents, uninformed as to their values, and indiscriminating as to their make-up.

It is probable that the book is held in greater reverence than it deserves. To the unlearned the very fact that he reads something in a book is often sufficient to cause him to believe it implicitly. A large number of people extend this credulity to the newspaper as well. As a result of this belief in the printed word, people are led astray in their thinking — they believe things which are not true or only half true. This results in an unfortunate and often in an unhappy state of mind. Violent partisanship in politics is encouraged by undue belief in the printed word and many errors of thought and action result. It would seem far better to teach children as children that books are made by man, not handed down from the skies in some mysterious way, and that they are subject to error and present varying points of view. Not only do authors differ as to opinion, but they often differ as to the same fact. The habit of consulting more than one reference book, noting where authors agree and where they differ, could thus be formed; and the child would grow to

have a tentative mind toward the written word. This is surely much to be desired. The reader should discriminate; he should know what to read and what not to read; he should be taught that there are books and books. He should learn to ask, "Who said this?" before he says, "I believe."

Again, many people do not know how to distinguish a valuable book from one which has no value. They cannot tell from an examination of a book whether it is well or badly, cheaply or honestly made. Books of little beauty and of no value as sources of reliable information are sold to American housewives annually in great numbers; nor is the American husband much less susceptible. Many people do not know how to judge the worth of a book by a rapid examination They cannot tell whether a book is an ancient classic in a cheap dress, or whether it is a compilation of junk dressed in tinsel. As a result the itinerant bookseller gets in his work each year and sells books and sets of books to uninformed people at highly exorbitant prices.

To remedy this, the school needs to teach the child how to judge the worth of a book and how to buy books intelligently. In relation to judging the probable worth of a book he can be informed as to the importance of knowing the date of publication, whether or not the book is protected by copyright, the names of publisher and author. He can also be trained to judge the outward form of a book. Good books of fairly cheap construction can be distinguished from badly made books in gaudy form. Information about reputable publishers

and bookselling concerns can be disseminated, and the knowledge thus given children at school will gradually permeate the home and raise the standard of judgment. The quality of the home library can thus be improved because children will influence parents greatly in their choice of books.

The attitude toward the physical book may also be said to have importance on account of the manner in which it influences its use. Teachers have long laid great stress upon the care of the book in one respect at least; they have not hesitated to punish children for marking in their books. Books which are owned by school districts, particularly, it is held, must be maintained without mark or blemish. This, it seems to the writer, is an inheritance from the days when books were very scarce and relatively high in price. They were often put away in the best room and the shades were pulled down so that they might not fade in color. An extreme attitude on the care of books would seem, theoretically at least, likely to lead to disuse and to undue emphasis upon the book as intrinsically valuable rather than as valuable only as a means to an end.

A reasonable attitude toward the care of the book demands that it be used as carefully and intelligently as its value warrants. A very valuable book may well be wrapped in cotton and embalmed in rose leaves, but the book which the child is to use in his everyday work is not such a volume and has other uses. It is reasonable that books which are public property should not be soiled or marked. The recommendation made by writers on study concerning underlining and making

marginal notes cannot very well be applied to the use of such books. Children rarely use such devices, anyhow, as was shown in Chapter III. Toward those books which are their own private property, however, children might be encouraged to have a different attitude. Older children, if they desire to make notes, underline, and in other ways record the results of their thinking, may be encouraged to do so. Such records often add greatly to the charm of a book and make it of untold value later, particularly if the owner happens to develop into a person of distinction. This use of a book may make it, to the owner, a much loved and prized possession. Children can never have the attitude of affection toward a book which is the property of someone else that they can have toward one of their own. Nevertheless, granting that children should be taught to have a proper regard for public school books and those drawn from libraries, it is more important that children should love books, though they soil them and wear them out, than that the books should be kept clean and spotless. In smoky Pittsburgh, the Carnegie Library serves thousands of children every year. The favor in which books are held may be noted in a rather concrete fashion by observing the amount of dirt which is deposited on the edges and the backs. The dirtier the book, the more popular the author. It would not seem wise, therefore, to be too insistent upon the care of the physical book but rather to make it strong and durable in order that it may long continue to endure the loving, though soiled, fingers of the children.

Teaching the use of the special reference book. — Intelligent use of special books of reference is rare among adults, even among those who have attended schools. Books of reference are often used very little even in schools because children are not trained to use them. Some training in the use of the dictionary is frequently given but not enough to enable students to realize its full value as a book of reference. It is begging the question to say that children in the lower grades cannot learn how to use books of reference anyhow and that those who drop out early will not need to know. The fact remains that if these books are to be used intelligently, if they are to serve as a means of self-education to any considerable number of adults, training must be begun early and continued. Education must be conceived of as a process of furnishing the individual with means of continuing his growth as well as of giving him knowledge of immediate value. When such a conception is present, the teacher will begin to teach the child to use the dictionary and the encyclopedia as soon as the mechanics of reading have been mastered. She will cease to assume that the child is capable of only the narrowest kind of rote learning and begin to appreciate that he has potential power to learn a great variety of useful things. She will not worry about what the child can learn but will be disposed to experiment with him and draw out the latent powers which are in him, for children are quite capable of learning how to use books of special reference intelligently. Except where the learning of the exact words of a poem, a set of directions, a rule, or a

table in arithmetic, or other set of arbitrary facts is concerned, the child should learn how to get information from a variety of sources. A definite time and place should be appointed to begin teaching the child how to use the special books of reference and such teaching should be continued until the habit of using such books is well formed.

How to get the child to use reference books. — There are many ways of getting children to use reference books. The direct method is to assign problems which require the use of such books for their solution. Taking a class to the library, showing them different books, the card catalog, the magazine index, and giving them direct practice in looking up facts is a direct method of introducing the training. Practice in the use of such materials until skill is attained then follows. The teacher can encourage the children to bring to school such books of reference as they may have at home, make a collection of such reference material in the classroom, and reward with special praise children who show interest and proficiency in its use. The book club, generally formed to promote leisure reading, may well be devoted in part to the promotion of good habits of reference reading. The club may profitably consider the suitability of different kinds of reference material, and the values of different books, and may make notes on special works of reference. The common belief that such work is uninteresting to children is unfounded. Observation of children working with reference books in well-organized schools where reading of the work type as well as that of the recreatory

type is stressed, will soon dispel any teacher's doubt about the matter. Children like to do such work when they know how. When intensely interested in working out a problem they will consult surprisingly difficult sources of information, rather than dispense with the knowledge they need.

Need of well-written reference books for children. — At the present time, although the number of such books is increasing, there is a dearth of well-written reference books for children. The encyclopedia, so common in American libraries, and other books of reference on special subjects, are often too difficult for children, and do not contain enough interesting detail. However, there are one or two examples of books of reference for children which represent, in a measure, the kind of material which should increase in volume. One of these is a set of children's encyclopedias containing a large amount of information on subjects of interest to children and another is a children's encyclopedia which makes a specialty of pictures. There must be, however, more and better books on all the subjects studied in the elementary school, books replete with detailed information, well written, profusely illustrated, well indexed, and with much graphical material which will be useful in the study of geographical or other problems. In a certain school the pupils in the middle grades, when asked what book they liked best of all the reference books available for their use in geography, chose a book on commercial and industrial geography written for college students. And when asked why they chose this book they replied that they liked it

because it was so simple and easy to read. Isn't there a grave danger that in writing down to children, textbook makers may often take out of their material the things most valuable to children? Spoon-feeding is certainly not desirable. It is possible that a good writer of a college text might also be the best writer for children, because, after all, the secret of all great writing is simplicity and clarity. Highly technical and abstract books are, of course, too difficult for even the well-trained child. Books giving simple, concrete detail interest him. The bare outlines of encyclopedic fact or discussions that are verbose and difficult in vocabulary are unsuitable; but other books he can read, provided they are not written on too abstract, or technical subjects, unrelated to his experiences.

Fortunately, libraries are turning their attention to the matter of furnishing teachers more information relative to reference books for elementary school libraries. The list of "Basic Reference Books for a Platoon School Library" presented by the Carnegie Library of Pittsburgh and reproduced here in part by permission of Miss Frances H. Kelly, Head of the Department of Work with Schools, is one of the few lists of this kind the writer has seen.

BASIC REFERENCE BOOKS [1] FOR A PLATOON SCHOOL LIBRARY

Grades 1–6

A Standard Comprehensive Dictionary

"Webster's New International Dictionary" (Merriam. $16.00) has the advantage of being in one volume, is the oldest and most

[1] Carnegie Library of Pittsburgh. "School Bulletin," No. 172. February 1, 1926.

famous American dictionary, and is a standard for simplicity of definition, spelling, and division of syllables.

A General Encyclopedia

"World Book" (Quarrie. $55.00) is an excellent encyclopedia for readers who are not old enough to use the "New International" or the "Americana." It contains articles on subjects which are frequently desired for elementary school students, but difficult to find elsewhere. The references to allied subjects at the end of the articles are valuable. A loose-leaf annual has been issued since 1921. Students should, however, be encouraged to consult either of the more comprehensive encyclopedias.

Other Encyclopedias

"Persons" edited by Lincoln MacVeagh (The New Champlin Cyclopedia for Young Folks. Holt. 1924. $5.00) is a biographical encyclopedia including people prominent to-day in science, art, and public life, as well as the chief figures in ancient and medieval times and the most important biblical characters.

"Places and Events" edited by Lincoln MacVeagh (The New Champlin Cyclopedia for Young Folks. Holt. 1925. $5.00) is a geographical and historical cyclopedia useful for school work.

J. D. Champlin's "Young Folks' Cyclopedia of Common Things" (Holt. 1916. $3.50) has information about all sorts of things such as college colors, national flowers, standard time, armored ships, asbestos, knots; but it pertains in general to nature, science, and art. The articles are short and told in simple language.

Artemas Ward's "Encyclopedia of Food" (Published by the author. 1923. $10.00) has popular descriptive material on all the more important foods. Formerly published under the title "Grocer's Encyclopedia." The book has many illustrations, seventy of which are in color.

Using books for pleasure does not prepare directly for using books in study. — As was suggested in an earlier chapter, the literature period is not the time for teaching children how to work with books. Experience teaches that the training in recreatory reading

and the use of literary books may fail to give the child the techniques of the study type of reading. It is better to attack the problem of teaching children to use books of reference as a separate problem than to confuse it with the other type of activity. Many people who habitually read much fiction never consult a reference book of any sort. It is conceivable that one might be an excellent reader of drama, poetry, the short story, and other literary forms, and still be a failure at running down information, or writing an expository article. The attitude of relaxation which is generally assumed toward recreatory reading is not conducive to work of a factual nature and the techniques involved are not the same. It is well, then, not to confuse the two in practice, nor to teach the child how to do one kind of reading and fail to teach him how to do the other.

Books for work and books for play. — While play and work may at times become identical, for most people play is play and work is work. There are books for both purposes. Attitudes toward these two types of books are different. In departmentalized schools teaching the use of *books for work* is properly the task of the teacher of the technical phases of reading. Introducing the child to *books for play* is the problem of the teacher of literature. The teacher of content subjects must become a good teacher of *books for work;* and to this extent, all teachers who use books in their teaching must be teachers of reading. Until teachers of content subjects are trained in the techniques of silent reading, however, this work must be undertaken

and put through by the teacher of reading. She will do well to make a distinction between the two types of material and the two techniques, even though she may teach both the reading of literature and technical reading.

Encouraging the child to have a study place. — The teacher who introduces the child to the work of reference books, also has an opportunity to teach him many of the things that go with books and study. Whipple's rules, contained in his little volume *How to Study Effectively*,[1] contain many valuable suggestions, among which is this one: Have a study time and a study place. To most students there is something very pleasing about having a special place for study. Only the exceptional person can do any considerable amount of work in an uncomfortable posture, and in uncomfortable surroundings. Writers for generations have written about their studies with fondness. Lowell's delightful essays, *From My Study Window*, have associated with them the scholar's love for the place in which he pours forth his soul in writing or absorbs the greatest of the world's thought from those prized volumes which line his bookshelves. The teacher can encourage the pupil to have a place where he keeps his books and papers, his tools for knowledge-getting, and to take pleasure from such a place and such surroundings. Who knows what latent scholar, what budding scientist, may get his inspiration for service in a humble corner where he has his books and his papers and performs his first

[1] Whipple, G. M. *How to Study Effectively*, Public School Publishing Co., 1916.

inexpert and faulty attempts to study in the real sense of the term?

The effect of such training upon study in general. — A proper emphasis placed upon books for work and upon the techniques of using them, an attempt to create an attitude of interest in them in the reading period should be reflected in all of the study that a child does with books. It is through the formation of such attitudes and such habits that real students are made; not through the idle reading of an empty day. An appreciation of the need for work and a proper respect for the sources and tools of intellectual endeavor, can be developed in the child from his earliest years. There is no excuse for wailing over the failure of children in high schools and colleges to do any intellectual work worthy of the name when teachers persist in making them think of work as distasteful and in refusing to train them to use the tools of intellectual effort. The idea of transfer of training as a general means of taking care of important skills and knowledges needed by the child has been practically given up; teachers must cease to think that if the child is taught reading as a skill and advised about methods of study in a general way, he will be made into a good student by such training. Training for study involves the specific methods of teaching that we are now using in teaching the four thousand words needed in spelling and the fundamental operations in arithmetic. The effect of analyzing study to determine the habits, knowledges, skills, and attitudes needed, of providing for training in these habits, knowledges, skills, and attitudes, and of prac-

ticing them in a study situation will do more for general improvement of study habits than all the incidental training which could ever be devised. This is particularly true of those children who are on the lower intelligence levels. If they are ever to study at all they must have definite and specific training. The type of training suggested in Chapter XII and the following chapters of this volume is very much needed in the schools. Especially desirable is training in the use of books and libraries such as has been described in the present chapter.

SUMMARY OF THE CHAPTER

In this chapter the necessity for training in the use of books is emphasized and the need for starting such training early has been presented. It has been shown that there are specific knowledges and skills in the use of books which are needed by the student who would use them in study. Attitudes of a desirable sort should be created. Specific training in the use of different types of reference books should be given children; and they should be trained to use skillfully the various devices for making the knowledge in a book accessible — table of contents, paragraph headings, bibliography, and index. There is great need for juvenile reference books of a detailed character and for making the use of these books a pleasure by giving definite training in their use and developing an appreciation of their importance. Children should be encouraged to have a place to study and to have a place to keep their books. Encouragement of a home library,

the giving of information about books and where to buy them, will go far to develop the right attitudes toward study and the instruments of study. These things are best accomplished by direct rather than indirect methods.

SUGGESTIVE PROBLEMS

1. How is time to be found to teach children how to use books?

2. Indicate whether or not it is possible that the skills taught in silent reading are all that are needed in study situations with books?

3. Why should all teachers in the elementary grades be trained to teach silent reading?

4. If this were done would it be necessary to have a reading period after the primary grades? Why?

5. Why should a specific course in the use of books be given in the elementary grades?

6. Explain why children might be led to take as much pleasure in books and study as in some of their recreatory pastimes of a similar nature?

7. What is the probable effect of the emphasis on recreatory reading in primary and intermediate grades upon the attitude of children toward books of fact?

SUPPLEMENTARY READINGS

1. ANDERSON, C. J. and DAVIDSON, I. — *Reading Objectives*, Chapter XIV. Laurel Book, 1925.

2. DEARBORN, G. V. N. — *How to Learn Easily*, Chapter IV. Little, 1916.

3. PARKER, S. C. — *Methods of Teaching in High School*, Chapter XVII. Ginn, 1915.

4. Rice, O. S. — *Lessons on the Use of Books and Libraries.* Rand, 1920. (An excellent guide for teachers and pupils in all phases of the subject.)

5. Stormzand, M. J. — *Progressive Methods of Teaching,* Chapters I and II. Houghton, 1925.

6. Ward, G. O. — *Practical Use of Books and Libraries.* Boston Bk., 1911.

CHAPTER VIII

The Single Reading as a Tool in Study

The common use of a single reading. — In the modern world with its many demands upon the time of the individual, opportunity is often lacking for that type of careful, analytical thought-getting which characterizes the work of the critical reader. Time to browse and to woolgather if one wills, no matter how attractive browsing and woolgathering may be, seems to be lacking in the present day. A ride on the street car in a great city will impress the thoughtful observer with the almost universal habit of rapid skimming, or reading material a single time. Young people and old, hanging to a strap, or wedged into crowded seats, avidly read the latest news. And when the home is reached at night, a very common method of spending an hour before bedtime is that of rapidly reading a story or an article in a magazine, or of reading a chapter in a recent book. The pressure of modern life seems to leave the business man little time for any except the most rapid type of reading. Nor is the condition any different in the office of the professional man who must work with books, or in the college library where students are preparing assignments. There, too, the reader is forced by the many demands upon his time to read as rapidly as possible the material in which he is interested. How often can the busy executive do more

than read rapidly through an article in his trade journal? How many students find time for more than a single reading of material assigned in history, economics, education, or what not? From observation and inquiry of teachers and others, the writer has become convinced that a single reading is a tool used by a large number of people who read for information or pleasure.

A further examination into the practices in elementary and high schools will reveal the fact that a surprisingly large number of students read an assignment a single time. Charters[1] reported that forty-one per cent of the 258 college students she investigated habitually read their lessons once only. Fifty-three per cent read it more than once. Only the most inefficient readers among mature college students will indulge in the practice of reading an assignment over and over again until, as in the school of an earlier day, it is "learned by heart." Students in classes in a university have almost invariably reported the very common practice of a single reading. The large amount of material now available in printed form, the increasing practice of library reading, and the use of reference materials in elementary school, high school, and college, makes it probable that in order to serve the needs of individuals in life, the school must investigate the problem of a single reading and discover ways of perfecting the ability among students.

The need for skill in a single reading. — Reflection will convince the student that skill in a single rapid and effective reading would result in great saving of time

[1] Charters, Jessie Allen. *Op. cit.*, pp. 41–42.

in the use of books in study. Wherever large amounts of reading material are assigned, as in history, economics, education, law, politics, or in other subjects, the very length of the material makes it impossible for the student to cover it more than a single time. The student who is handicapped with a slow rate of reading, or who finds it necessary to read ordinary material over several times before he can grasp and retain the meaning, is hopelessly handicapped in his efforts to obtain an education and prepare for his vocation. In a like manner, many life occupations demand a high degree of reading skill from the worker. The busy pastor, the lawyer who wishes to keep up with the times, the physician or other professional man, needs to be able to read rapidly and efficiently a single time, if possible, the new materials in his profession, and to grasp and retain the content. If the school could train its pupils to attain a high degree of skill in a rapid and efficient single reading, the interests of large numbers of people would be served thereby, and more time could be devoted to leisure and the development of tastes in art and literature than can now be given to these pursuits by the busy student or professional man. Skill in a single reading would substract from the hours which must be devoted to work with books, or would add greatly to the extent of material which the busy worker could cover in a given time. This holds true also in the school. Children are asked to read more and more widely in the preparation of lessons in content subjects. All in all, then, a large number of people need skill in a single reading.

Is it possible to read material a single time and retain the important ideas? — At first thought it may seem rather improbable that an ordinary reader could read material of any difficulty a single time and retain the important ideas. The unskillful reader who is imperfect in the mechanics of reading probably cannot do so, but some noted readers have developed this skill to a very high degree. It is said of Macaulay that he could read a poem once and practically repeat it verbatim. He had a remarkable photographic memory. Roosevelt is known to have been a very rapid and voracious reader. Other men have testified as to their ability to read rapidly and retain material in this manner. Some college students report that they have ability in this practice; and it is not at all improbable that the skill could be highly developed by proper training even in the case of readers of ordinary ability. However this practice can rarely be followed with material which is unfamiliar in type, or which presents great complexity in structure, or which is highly abstract in character. One may come to read the latter materials with a high degree of facility when the ideas presented have become familiar, but not when one is first introduced to them. It would perhaps be more accurate to say, therefore, that it is possible for a reader to gain a high degree of facility in a single reading of materials by practice and by long acquaintance with particular types of material. It is now recognized that a reader may be very successful in one field and very poor in another.

Much material not worth more than a single reading. — It is obvious that there is much material printed today which is not worth more than a single reading. The daily paper, the weekly review, a large number of the monthly magazines, as well as popular fiction and biography, seldom demand more than a single rapid perusal. This is true also of much material that is used in study. The advanced student seldom reads material of ordinary difficulty more than once except when he wants to take notes on it or use it for later reference. The differences in value of various types of writing have long been emphasized by different writers. The common practice in the elementary and high school has been not to differentiate between that which should be read carefully and studied and that which should be given a single rapid reading. It is probable that a great deal could be gained in study if children were trained to give a rapid glance over material as a preliminary to further reading or study. They should have practice in judging the probable worth of the material and in deciding what treatment to give it.

How well can children retain after a single reading? — It is necessary, in order to be of any practical assistance to teachers in their efforts to train children to read rapidly and efficiently, to know how well they can retain material after a single reading. This problem was suggested to the writer for graduate study and experimentation several years ago by Dr. Ernest Horn who emphasized the importance of knowing the effect of a single reading as a step preliminary to many other

investigations of reading and as a first step in an attack upon the problem of economy in study. It is obvious that if a single reading enables the student to grasp and retain material with a high degree of efficiency there is little need for additional rereadings or other means of insuring comprehension and retention of material to be used in study. If, however, a single reading is inefficient, then, if study is to be improved, other means must be devised to insure efficient comprehension and retention of reading material. For a similar reason, an analysis of efficient practices in the process will sooner or later be concerned with the problem of rereading and other practices which may be employed to get the thought from the printed page, for as soon as it is realized that reading is a complex process and that it cannot be treated in a general way, an analysis of the various acts in reading and the determination of the efficiency with which readers perform the various acts must follow, if reading practices are to be made efficient. The determination of the efficiency of a single reading is, therefore, a first step in the attempt to improve reading skills and to improve the use of the reading skill in study situations.

An investigation of a single reading. — In 1920, and for the two years following, the writer carried on an investigation of the effect of a single reading of content material among elementary school children in grades four to eight inclusive. A preliminary report of this study was printed in the *Twentieth Yearbook of the National Society for the Study of Education, Part II* [1]

[1] Chapter VI, pp. 90–102.

and later as one of the University of Iowa "Studies in Education."[1] In the latter volume a complete report of the investigation is given. The study will be reviewed here for the purpose of bringing together in one place the data that bear on the various aspects of the problem.

1. *Purpose of the investigation.* The purpose of the investigation was to measure the effect of a single reading of various types of content material used in the elementary school among children of the middle and upper elementary grades. The study was an experimental investigation of a typical schoolroom activity in its natural setting, not an attempt to standardize a silent reading test. The investigator attempted to estimate the effect of various factors which remain uncontrolled in ordinary measurements of reading ability. Factual material was used because the object of the experiments was to measure the single reading of the work type rather than recreatory reading.

2. *Lack of previous data.* A survey of available material on the effect of a single reading revealed the fact that there had been no previous direct attack upon the problem but that there were some results incidental to other studies of silent reading which had been made for different purposes.

Pintner, Waldo, Brown, Pintner and Gilliland, Mead, Peters, and Germane have reported data which throw some light on the effect of a single reading. The findings of these investigators are given in Table VII

[1] *The Effects of a Single Reading.* State University of Iowa "Studies in Education," Vol. 5, No. 7, 1924.

in which the scores of pupils after a single reading are expressed as per cents of the total possible scores.

TABLE VII

SUMMARY OF INVESTIGATIONS CONTAINING DATA ON EFFECT OF A SINGLE READING

INVESTIGATOR	NO. OF PUPILS	GRADES III	IV	V	VI	VII	VIII	MATERIAL
Pintner	23		40					Stories
Waldo	*	44.6	60	25.6	35.	48.3	62.5	Current Events
Brown	400	30.5			27.3			Paragraphs
Pintner & Gilliland	130	64.	63.	67.	68.	80.	78.	Fifty-word paragraphs
Mead	112				40.4			Stories
Mead	340	34.2	23.9	43.1	44.3	38.	55.	Stories
Peters	270	48.6	73.	78.	58.			Narrative
Germane	230				21.2	27.3	32.2	Factual

* Total number of pupils not given.

Table VII reveals the greatest variability in the measurement of the effect of a single reading. None of the investigators except the last had the problem in mind. The scores range from one-fourth to three-fourths of the total ideas in the articles read in each grade. The data are inconclusive but some tentative conclusions might be made from them:

a. Scores on factual material generally run low.
b. Scores on narrative material generally run high.
c. Scores on short paragraphs run high.
d. The scores after a single reading range from 23 to 25 per cent or even higher, but there is no consistent development from grade to grade, and

the data suggest that different types of material, of different degrees of difficulty, were used incidental to some other problem, which, of course, was the case.

In the investigations indicated in Table VII, where the data gathered are indirectly contributory to the problem of a single reading, there are many factors which made a further investigation seem desirable. Not enough materials were used, the materials varied greatly in character, and the results were mainly from reading narrative material, whereas the effect of a single reading of factual material was the problem now under consideration.

3. *Materials of the investigation.* *a.* In experiments with various types of materials. In a set of experiments with grades 4, 5, and 6 of the University of Iowa Elementary Schools and a neighboring public school, several types of materials were employed. A series of five experiments was run with a sixth grade. The object of these experiments was to discover by a rough but economical method the probable effect of a single reading of various types of material. The materials were of varying length, highly factual in character, and of varying degrees of difficulty. They were especially prepared for the experiments and were in printed, mimeographed, or hectographed form. The tests used to measure the effect of reading were of two types: (1) a multiple choice test of such statements as the following:

They were first visited by (Columbus, De Soto, Narvaez, Balboa, Carteret, John Cabot) in (1121, 1776, 1850, 1767, 1492);

(2) a test of short questions which might be answered by a word or a phrase such as,

In what two ways did the armed followers help the master of the castle?

1 .....

2 .....

Such tests are easily answered by children and do not require a high degree of language ability.

A list of the titles of the articles read is given in Table VIII. The titles suggest the content of each and the length of the article indicates the duration of time necessary to read it. Short articles are theoretically easier to read than longer articles.

TABLE VIII

THE CHARACTER AND LENGTH OF ARTICLES USED IN EXPERIMENTS WITH GRADES 4, 5, AND 6

TITLE	CHARACTER	NO. OF WORDS
1. Government of Switzerland	Civics	1200
2. Medieval Castles	History	687
3. Chasing a Rainbow	Narrative	1000
4. Tuberculosis	Hygiene	1900
5. Peanuts	Geography or Agriculture	1900

These articles are representative of those used in the elementary schools in the content subjects with the exception of "Chasing a Rainbow" which is a narrative selection of a simple character used for comparative purposes in order to bring out the difference between the reading of narrative and factual materials.

b. Carefully controlled experiment with geographical material. The material used in a second series of experiments in which variable factors not controlled in the first series were studied, consisted of an article "The Admiralty Islanders" taken from a volume by H. N. Hutchinson, *The Living Races of Mankind*, and rewritten by the experimenter. This is an article one thousand words in length of interesting and very detailed material designed to approximate in difficulty such descriptions of different peoples as are commonly found in intermediate and advanced geographies, or in simple books of travel, but containing facts about a people with whom the pupils were not likely to be familiar. The purpose of preparing this article was to eliminate the factor of previous knowledge which, as the following report will show, constitutes an important unmeasured variable in most reading tests.

The test used in these experiments was similar to the first test described in the previous section, a multiple choice test of a very exhaustive type designed to measure the retention of every important item in the article.

Pupils in grades 4 to 8, inclusive, in six different school systems, were used in this experiment. The total number of pupils involved was 373. Five of these schools were public graded schools and one was the University of Iowa Elementary School in which grades 4, 5, and 6 were used.

4. *Method of the investigation.* *a.* Experiments with various materials. In this series of experiments the method of investigation was comparatively rough but

as accurate as methods of measurement in groups generally are. Pupils were allowed to read the material once, after having been given a test to determine the extent of their previous knowledge of the subject. Immediately following the reading they were given a second test. At a later date, varying from 30 to 54 days, they were given a delayed recall test to measure retention after a lapse of time during which nothing was done to cause them to remember the material.

b. Carefully controlled experiments with geographical material. In the second series of experiments the same methods were used in general with the exception that the pupils were divided into three groups, each of which was subjected to a different treatment. These groups were designated as Groups A, B, and C. Group A took a test of previous knowledge, read the article, and was tested immediately after; then again twenty days later. Group B took no test of previous knowledge but read once and was tested immediately after the reading and again twenty days later. Group C took no initial or immediate recall test but read the article once and was tested twenty days after the reading. By this method the experimenter endeavored to control the variable factors of previous knowledge, practice with the test, and motivation.

When a child is given a selection to read either orally or silently, it is obvious that unless he already knows something about the material, he cannot read it intelligently; that is, the elements of which the selection is made up must be so related to his previous experience that they have meaning for him. This previous knowl-

edge is one of the necessary conditions to reading; it is ordinarily unmeasured but it affects the results of reading to a large extent. Again, if a test is given to measure the amount of this previous knowledge, the test will have an effect in motivating the reading which follows and in reviewing the facts known. The reader will be given a certain mind-set toward the reading which follows the test. If, then, a second and third test are given to measure the effect of the reading, the scores made on these tests will be affected by the practice with the test, which, by repetition of the facts, tends to perfect their retention and perhaps to call up new associations which were not previously recalled. These factors are all present in the measurement of a single reading, and the effect of the single reading itself, if measured, must be separated from these factors and studied. Practically this is impossible except by the method of using control groups of equal ability, subjecting each group to different treatment and then using the scores of each group to correct the sco es of the other groups for variable factors. This the investigator attempted to do.

The groups were divided by the method of teachers' judgment. The subsequent measurements proved that the groups were fairly evenly divided and the experiments were successful in estimating the probable effect of the factors which had been unmeasurable variables in the earlier experiments.

5. *Results of the investigation.* The results of all the experiments will be summarized in the following tables. Only the most significant findings are reported here.

The first results reported are those recorded as a result of the measurement of a sixth grade, using five types of material.

TABLE IX

EFFECT OF A SINGLE READING OF VARIOUS TYPES OF MATERIAL BY A SIXTH GRADE (16 PUPILS)

SELECTION	PREVIOUS KNOWLEDGE	IMMEDIATE RECALL	DELAYED RECALL	DAYS ELAPSED
1. Government of Switzerland	10.	43.9	25.	54
2. Medieval Castles	16.3	37.4	27.3	31
3. Chasing a Rainbow	34.8	78.	70.3	39
4. Tuberculosis	14.8	31.6	21.1	36
5. Peanuts	21.9	47.5	..	..

The above table shows that the amount of previous knowledge possessed by this grade on various articles ranged from 10 to 34.8 per cent of the total ideas in the selection. The effect of delayed recall is shown to be a loss of from 10 to 50 per cent of the total of ideas in the article. The amount retained after a single reading is shown to be from 31.6 per cent on "Tuberculosis" a factual article, to 78 per cent on "Chasing a Rainbow," an easy narrative selection. On factual material the range is from 31.6 to 47.5 per cent of the total of ideas in the article, or less than half. On delayed recall it ranges from 21.1 per cent to 27.3 per cent, or approximately one-fourth. That is to say, the effect of a single reading of this material is to give the pupil

ability to retain from one-third to one-half the ideas in the selection on immediate recall, and from one-fifth to one-fourth of the ideas on delayed recall. It must be remembered, however, that the immediate and delayed recall scores in this experiment have been influenced by the giving of the test of previous knowledge, and that this test shows that even before reading, pupils were familiar with from 10 to 20 per cent of the ideas. The net effect of the single reading would seem to be to give power to retain from one-fifth to one-third of the ideas on immediate recall and from approximately one-twelfth to three-twentieths on delayed recall. That is to say, pupils who read factual material of this kind in a sixth grade are very inefficient in retaining the ideas after a single reading, even when such reading is motivated by the giving of a previous test.

With narrative material, the case is somewhat better. These pupils could retain almost four-fifths of the ideas in the story after a single reading and seven-tenths after 39 days had elapsed, but they already knew three-tenths of the ideas before reading the material at all, so that the net results of the single reading are four-tenths for immediate recall and seven-twentieths for delayed recall. The results are then in favor of the effect of the single reading for narrative material, especially on delayed recall. This may be due to the fact that children are trained so consistently in reading narrative material in the elementary grades.

The next Table, No. X, gives the results of an experiment with the factual article "Peanuts" in two schools, grades 4, 5, and 6. This table shows the growth in

ability to read a single time and retain important ideas in these three grades.

TABLE X

GRADE AVERAGES ON ARTICLE "PEANUTS" IN TWO SCHOOLS (123 PUPILS)

GRADE	BEFORE READING		IMMEDIATE RECALL		DELAYED RECALL (54 DAYS)
	School 1	School 2	School 1	School 2	School 1
6 . . .	30.8	18.7	62.1	37.2	...
5 . . .	21.2	13.3	50.	27.6	39.3
4 . . .	12.8	12.4	37.6	18.4	21.5

Pupils in School 1 were highly trained in silent reading. Pupils in School 2 were trained by the ordinary oral reading methods. The superiority of the former is very marked. Their scores are almost twice as high as those in School 2. The scores on this material, an interesting factual article, run very similar to those given in Table IX. Previous knowledge ranges from 12 to 30 per cent; immediate recall scores from 18.4 to 62.1 per cent and delayed recall, 21.5 and 39.3 per cent respectively. The net scores on immediate recall represent from one-fourth to one-third of the total ideas in the article; and the delayed recall from one-twelfth to one-fifth of the total ideas. The scores when corrected for previous knowledge remain very small.

The delayed recall scores for the two grades after a lapse of 54 days show a loss of 21 and 45 per cent,

respectively, of the immediate recall scores. This loss is relatively large when it is remembered that the immediate recall scores of the groups represented only 29.8 and 24.8 per cent of the total ideas of the article. The net results of the effect of the single reading after 54 days seems to be 18.1 and 8.6 per cent of the total ideas in grades 5 and 4 respectively.

A set of tentative norms, gathered from the experiments of the writer and those of Edith G. Germane,[1] are given in Table XI to illustrate the inadequacy of a single contact with factual material of this type.

TABLE XI

TENTATIVE GRADE AVERAGES AS A RESULT OF A SINGLE READING

Grade . .	4	5	6	7	8
Score . .	14	20.3	25.7	27.3	32.3

The material given in Table XII represents the median scores made by the different grades on the article "The Admiralty Islanders." The grades were divided into three groups as explained in section 4 of this chapter. Results are given for each group in order that the reader may observe the effect of a single reading under varying conditions. Group A took a test for previous knowledge; Groups A, B, and C took tests for delayed recall.

[1] Germane, Edith G. *The Correlation between Speed and Comprehension in Silent Reading.* Unpublished thesis, State University of Iowa, 1920.

TABLE XII

SCORES BY GRADES FOR PREVIOUS KNOWLEDGE, IMMEDIATE RECALL, AND DELAYED RECALL OF ARTICLE "THE ADMIRALTY ISLANDERS"

GROUP	GRADE				
	8	7	6	5	4
			Previous Knowledge		
A	19.3	18.2	12.3	11.2	6.
			Immediate Recall		
A	59.5	52.5	47.5	36.5	19.
B	45.3	37.7	29.5	25.	15.5
			Delayed Recall (20 Days)		
A	47.5	41.6	30.	26.4	16.6
B	38.6	32.2	28.	27.	13.6
C	23.7	21.2	18.4	15.7	10.

The above table shows very clearly the effect of the control which was exercised over the variables by the division of groups. Group A which gets the larger amount of practice with the test and experiences the effect of motivation due to the test, excels throughout, Group B comes next, and Group C last. The amount of effect due to a single reading on immediate recall in the normal reading Group B, uncorrected for the effect of previous knowledge, runs as high as 45.3 per cent in Grade 8 and as low as 15.5 per cent in Grade 4. Previous knowledge is considerable in amount, running from 19.3 per cent in Grade 8 to 6 per cent in Grade 4.

The effect of a single reading on delayed recall is small, as shown by the scores of Group C, running little higher than the scores for previous knowledge by Group A.

The table shows that ability to read a single time varies in the same manner as other measurable abilities. There is uneven progress from grade to grade but a distinct development in the ability from the lower to the higher grades. The computed corrections for the three variables, previous knowledge, motivation, and practice, are given in Table XIII for immediate recall. The variables are estimated for delayed recall in Table XIV. These corrections are tentative estimates and do not purport to be exact measurements of the variables.

TABLE XIII

PROBABLE EFFECT OF VARIABLE FACTORS IN EFFECT OF A SINGLE READING OF "THE ADMIRALTY ISLANDERS" ON IMMEDIATE RECALL

VARIABLE	GRADE				
	8	7	6	5	4
Effect of single reading . .	26.	19.5	17.2	13.8	9.5
Effect of previous knowledge	19.3	18.2	12.3	11.2	6.
Effect of motivation . .	14.2	14.8	18.5	11.5	3.5

The effect of motivation and previous knowledge on the immediate recall scores are believed to be almost

as large as the single, though indispensable, reading itself.

TABLE XIV

PROBABLE EFFECT OF VARIABLE FACTORS IN SINGLE READING OF "THE ADMIRALTY ISLANDERS" ON DELAYED RECALL

VARIABLE	GRADE				
	8	7	6	5	4
Effect of single reading . .	4.4	3.	6.1	4.5	6.2
Effect of immediate recall .	14.9	11.	9.6	11.3	3.6
Effect of two tests . . .	34.2	29.2	21.9	22.5	9.4

It is believed that when the effect of previous knowledge, motivation, and practice with the immediate recall test is eliminated, the effect of a single reading is very small. That is to say, a single reading without immediate recall of the material leaves little effect upon the mind after twenty days. This is shown in the delayed recall scores of Group C in Table VI.

6. *Conclusions.* The conclusions to be drawn from the experiments here presented are significant to the teacher of reading and to all who are interested in problems of efficient work with books. They are as follows:

a. Scores on factual material run low and scores on easy narrative material high. The single reading is relatively efficient in the middle grades with simple narrative material.

b. A single reading of factual material in a sixth grade seemed to show that, if unmotivated by directions or problems, such a reading is not productive of efficient results, either for temporary or permanent use.

c. An experiment with factual material in two schools showed that trained children are much superior to untrained children. This suggests that training may increase the efficiency of a single reading to a considerable extent.

d. Previous knowledge, motivation, and practice with tests have a large influence in promoting accurate retention of materials which are read a single time. This emphasizes the desirability of using problem assignments, directed reading, and other means of causing the reader to work with a purpose. Such reading is to a marked degree more efficient than the undirected "study" or reading of the lesson.

e. The results of these experiments seem to justify the conclusion that it is desirable that children be trained to read some types of material a single time only.

f. Experiments with different types of material show that ability to read one type of material is not so great as ability to read another. A child can be a good reader of narrative material and a poor reader of material of a different kind. A single reading of very difficult material is a poor means of securing retention of that material.

g. It is probable that a single reading may be a very efficient tool for gathering material to be used in study. Whether it can be used in the assimilation of material

or not, will depend upon the training and the maturity of mind of the reader.

h. The low scores made by children on a single reading of factual material suggest the desirability of increasing attention to a single reading of such material and of training children to be highly efficient in this skill in order to improve their work in the content subjects of the elementary grades. That such training would also be effective in other directions is obvious.

i. The data cited in the investigation reported here makes it clear that the power to read material a single time and retain important ideas develops from grade to grade and exhibits the same general characteristics as other abilities which have been measured by group tests, such as ability to perform arithmetical operations, and the like.

Suggestions for improving ability in a single reading. — From his experience in measuring the effect of a single reading among elementary school children, the writer has concluded that this ability can be developed by means of specific attack just as can ability to perform arithmetical operations, to increase speed in reading in general, or to develop any other ability that is modifiable by practice. It is believed, therefore, that the teachers could make children much more efficient by following these suggestions:

1. Be sure that the child has a definite purpose when he reads factual material a single time, such as finding a particular reference, looking for certain facts, getting the gist of the thought, or some other such definite reason for reading.

2. Hold the child responsible for reporting accurately such facts as he has read a single time. He will fail at first but with practice he will grow more and more efficient.

3. In an attempt to develop this power, use very easy material at first and gradually increase the difficulty of the material as the child gains in ability.

4. Point out to the child the importance of being able to read rapidly and efficiently in this manner and show him in what situations it is particularly useful; as in comparing one reference with another, in looking for answers to a series of definite problems, in reading current magazines and newspapers, and the like.

5. Test the child frequently by rigid oral or written tests. Written tests of an objective character — completion, multiple choice, or true-false tests, direction exercises, or tests of short questions requiring a word or phrase for an answer — are particularly useful for this purpose.

6. Encourage the development of this power by showing the child his progress. Graph the scores from day to day and try to get the child interested in improving his own record.

7. Encourage children who are developing this power by giving them particular problems to report upon and requiring that they secure accurate information by means of a single efficient reading.

8. Encourage the child to discriminate between material which needs careful, assimilative study, and that which can be treated efficiently by means of a single skillful contact.

SUMMARY OF THE CHAPTER

In this chapter the importance of efficiency in a single reading has been pointed out. It has been shown that this is an ability that is frequently used in life outside the school and that a large number of students habitually read material a single time in study. This ability is not highly developed among untrained children, but it is possible to develop it even in general training. The desirability of developing the ability for specific uses cannot be denied. Some general suggestions for its development are given. Increased ability in a single reading, at least on the higher levels, will greatly improve ability to study efficiently. It is therefore appropriate to pay some attention to it in improving the work type of reading.

SUGGESTIVE PROBLEMS

1. Test your own power to read and retain after a single reading of various types of material. Estimate the increased efficiency in study which would come by increasing your power ten per cent.

2. Would you attempt to develop this power in the primary grades?

3. What would be the effect upon the development of this power of using phrase-flashing exercises of increasing length?

4. What do you think of having pupils read material a single time for oral reproduction as a means of improving this ability?

5. List situations in school or in life in which you think ability in a single reading would be highly useful.

6. Have you known anyone who is highly efficient in a single reading? If possible interview this person and ask him how he is able to read efficiently in this manner?

7. Could you read a geometrical problem in this manner and then solve it accurately? Could an expert in geometry?

8. What recommendation can you make in regard to reading ordinary story material?

9. Give reasons to show whether or not poetry should be read a single time in this manner.

10. When reading your Bible do you commonly use a single reading or more? Why?

11. What kind of material particularly lends itself to a single rapid reading?

12. To what extent would the mere fact that the attention of pupils is brought to this matter be effective in increasing ability to read efficiently a single time?

SUPPLEMENTARY READING

1. YOAKAM, G. A. — "The Effects of a Single Reading," pp. 90–102. *Twentieth Yearbook of the National Society for the Study of Education,* Part II. (A preliminary report.)

2. YOAKAM, G. A. — *The Effects of a Single Reading.* University of Iowa Studies in Education, Vol. II, No. 7, March, 1924. (A complete report of the experiments.)

CHAPTER IX

The Effect of Rereading

The importance of the problem. — To the student who must spend many of his waking hours in reading books for information or instruction, the problem of how best to utilize that time should be a very vital one. The teacher who must direct children in their reading and study of printed materials should also be greatly concerned with the problem of directing such reading and study in an efficient manner. If the student reads and rereads without discrimination or purpose, it is obvious that he will do a great deal of needless and inefficient work. The problem of how many times to read material for various purposes is therefore one of great importance to the mature student as well as to the teacher of children, yet very little attention has been paid to it. Teachers are generally unmindful of the effect of their directions to children to study or read the lesson until it is *learned*. A little reflection will convince the reader that there are many possible procedures in the mastery of printed materials. Much material requires only a single rapid reading; some should be read again and again; some requires only the simplest noting of the content; and some requires long and arduous analytical study. The teacher who wishes to direct the work of her pupils efficiently, there-

fore, must become informed in regard to the effect of repeated contacts with materials. Only by means of such knowledge can she train children to use books in an economical manner.

What is the probable effect of various rereadings? — In schools of a generation ago the teacher very commonly said, when making an assignment, "Read your lesson until you know it." When a child was idle at his seat, she often asked, "Have you read your lesson?" "How many times?" Usually she directed him to read the lesson again; and only when he had read it a satisfactory number of times did she direct him to do other work. Neither teacher nor child had more than a general idea that the effect of rereading would be to increase the child's knowledge. It was natural to draw an analogy between the memorizing of material verbatim and rereading for the purpose of fixing facts in memory; the assumption was correctly made that the probable effect of the repeated readings would, on the whole, be good. No question was raised, however, in regard to possible economies in the gathering of thought from the printed page. The result was that in some of the early schools children actually learned textbooks by heart. The thoughtful reading of material with a problematic set toward it, discriminative reading in which the value of material was judged, and other forms of thoughtful reading were commonly unknown. Times have changed, however, and to-day there is a growing interest in the probable effect of undirected reading as compared with directed reading and related problems.

The probable effect of repeated contacts with materials depends upon many variable conditions. Drawing upon our knowledge of the laws of memory and the experiments of psychologists with memorizing of rote materials, it seems clear that the probable effect of rereading is to add by each reading to the reader's grasp of the thought contained in an article, to cause the material to be memorized verbatim, or to cause the reader to master the ideas of the author and retain them in more or less permanent form. The laws of frequency, recency, primacy, and set or attitude all operate in reading as well as in verbal memorizing. To what extent they operate and to what extent repetition in the form of rereading is efficient depends, however, upon several factors. Different writers have noted that interesting material is more easily memorized than uninteresting material, that determination upon the part of the worker results in easier memorizing and fewer repetitions, that distributed practice is more efficient for permanent retention than undistributed practice, and that the complexity of the material both as to ideas presented and as to manner of presentation determines the ease or difficulty with which it is mastered. It may be noted also that adult readers, at least, tire of rereading familiar material except when they are seeking aesthetic rather than intellectual satisfaction, and that too much repetition of the same thing results in fatigue and a distaste for it. Thus in a general way, certain principles are known. The effect of repetition in general is judged to be advantageous. Yet there is doubtless much wasted time in study due to indis-

criminative repeated readings of worthless materials. It is probable that when this problem is investigated further untold economies will result from definite knowledge.

Little is known at the present time about the effect of a single reading as compared with a repeated reading of the same kind; the effect of mental summarizing as compared with rereading; the effect of repeated readings in indefinite amounts; the effect of written summarizing as compared with rereading; and the effect of directed reading compared with repeated undirected rereading. Here are enough problems to keep an army of investigators busy for some time to come. Again, the investigator might ask, "Does it pay to reread the newspaper, the monthly magazine, the textbook lesson, books on science, and the like?" or "How many times should the student be directed to read his lesson in history?" All these problems are of great potential interest to the student and to the teacher of children; yet many of them remain entirely unsolved.

Individual differences. — It is obvious that directions given to one student will not be equally effective in promoting the work of another. Group studies of the effect of these various procedures will be generally significant but certainly not applicable in their entirety to every individual student. However, there must be many general principles which will be of value to all; and these principles must be discovered by painstaking research.

The effect of repetition in rote learning. — A long and most painstaking series of studies in rote learning

by a group of German psychologists, beginning with Ebbinghaus[1] and continued by Meumann[2] and others, throws some light on the problem of repetition with connected meaningful materials and may be mentioned here. Ebbinghaus experimented with the learning of nonsense syllables and determined the number of repetitions necessary for temporary learning of these materials. His work and that of his followers established curves of learning for nonsense syllables and the learning of poetry. Meumann summarized this work and stated the general principles which apply to the learning of lists of unrelated syllables and of a simple poem. Certain principles developed by him which apply in a general way to our problem of repetition in reading, are stated here.

1. Repetition, or the law of frequency, enters into learning whether mechanical or logical.
2. Mechanical repetition is more necessary the more meaningless the material.
3. The material itself, its nature and amount, are the objective factors which determine how easily it may be learned.
4. Significant material is much more easily memorized than nonsense or meaningless material.
5. Difficulty of learning does not increase proportionately with the amount of the material but, on the other hand, less energy is required proportionately for longer materials than for shorter.
6. Easily fatigued attention is a disadvantage to learning.
7. A favorable attitude or set is advantageous to learning.
8. An undue amount of tension in the learner is unfavorable to economical learning.

[1] Ebbinghaus, H. *Memory*. Translated by Ruger and Bussenius. Teachers College, Columbia University, 1913.

[2] Meumann, E. *The Psychology of Learning*. Translated by Baird. Appleton, 1913.

9. The will to learn is an essential factor in learning.

10. In learning significant material the mechanical factor of repetition is less important.

11. The quality of the material affects the rate of learning. Material made up of incoherent elements requires a longer time to memorize than that which is a coherent whole. Poetry is easier to memorize than prose.

12. Whether the material is abstract or concrete, factual or narrative, is also determinative of efficient learning.

13. Understanding the thought of the materials to be learned is of chief importance as a means of expediting the learning of meaningful materials of a coherent nature.

14. The learner should grasp the leading thoughts and then pay particular attention to the transitional elements.

15. Attention should first be concentrated on the subjective elements which the learner most readily understands in the text as a starting point in learning.

16. Special significance in learning new material should be attached to those associations which are already in the mind of the learner. These are to be used as starting points.

17. Certain factors are a support to the process of memorizing such as the effect of concrete imagery, temporal relations, logical elements, sentence structure, introductory phrases, sentence length, rhythm, striking words, visual elements, and textual peculiarities.

18. Factors which hinder learning of logical materials are frequent recurrence of synonymous expressions, successions of short sentences, extremely long sentences, interpolated words, expressing familiar thought in an unusual form, fatigue, repugnance, unpleasantness, and the like.

These principles are applicable in a general way to the problem of repeated readings in study. Many of the principles are helpful as they stand. Some of them apply only in part to reading for thought since they are concerned mainly with verbal memorizing. Statements 10 to 18 are particularly significant and will require further development in a later part of the chapter.

In a general way it may be noted that mechanical repetition is less effective in learning logical materials and is probably less effective in reading for thought. It is probable, also, that much less repetition is needed to enable one to read material and grasp its thought than to commit the material to memory. The nature of the material, the manner in which it is written, and the determination of the reader, have a great deal to do with the ease with which he will master its essential thought. It is to be noted also, that material which has a background of meaning in the mind of the learner, that is, material which deals with ideas with which he has had experience, will require far fewer repetitions than material of an unusual content. Introspection will offer evidence to bear out most of these observations.

What then of the law of frequency? — Bearing in mind all these conditions which are present when a child is told to read or reread, what then may be said about the law of frequency? We must acknowledge that while we have some general information on the number of repetitions required for memorizing and some valuable suggestions as to the probable effect of repetition in reading, we have, in the work of the psychologists mentioned in the preceding section, little definite information as to the number and extent of repetitions advisable in reading and study. The law of frequency doubtless operates but to what extent? And what shall we tell children when we assign them lessons which involve thought-getting?

Recent group investigations give some data. — Some recent group investigations show that the effect

of repeated readings with groups of children in the schoolroom are less effective than might be supposed. Germane[1] and Yoakam[2] investigated the effect of rereading as compared with summarizing and the effect of repeated readings. These studies will be reviewed here for the purpose of indicating the bearings they may have on our problem.[3]

Germane's investigation. — Germane, working with experimental and control groups of elementary school children in grades five to nine inclusive, found that children who were instructed to make a self-made summary after reading an article through once were inferior to children who simply reread for the same amount of time. He found that the rereading group, using factual material, "What We Should Know About Tuberculosis" showed a superiority of from 4.4 to 20.4 per cent. He suggests that the reason the rereading group was superior was because the summarizing group were untrained and spent their time in indiscriminate notetaking.

In another experiment with the same pupils but different material, a factual article on the raising of peanuts, Germane investigated the effect of a summary when stimulated and directed by specific problems compared with rereading for the same amount of time. He found that the directed summary was more effective than the undirected rereading by amounts ranging from 0 to 17 per cent. He concludes that the summariz-

[1] Germane, C. E. *Op. cit.*, Chapter VII.
[2] Yoakam, G. A. *The Effects of a Single Reading*, Chapter VII.
[3] A recent experiment by C. V. Good not cited here agrees in a general way with the writer's findings. See bibliography at end of chapter.

ing group would have made a higher score had they been trained in skimming to find the answers to questions.

In a third experiment with college students, Germane investigated the effect of reading an article through once and spending the rest of the time mentally answering questions compared with rereading the same article the same length of time. He concluded that the effect of the directed mental summary was much more efficient than rereading of an undirected character. When school children in grades 6, 7, and 8, were subjected to the same experiment, he found that the summarizing group was superior to the rereading group by 53.8 per cent.

Significance of the Germane experiments. — The results of Germane's experiments are very significant to the teacher and student. It does not pay generally to direct children merely to reread. Directed reading is much more efficient in enabling them to master the content of factual material. It is probable that if children were trained to find the answers to problems and to summarize, the comparative effects of these practices and rereading would be much greater than is here shown. This seems to indicate that the indiscriminate repetition of reading so common in our elementary schools is very wasteful and must give way to some better practices. Germane has indicated at least two of these.

Yoakam's experiment. — Yoakam investigated the effect of two readings compared with a single reading among children in grades 7 and 8 in a midwestern school.

Two groups were selected for experimentation and equated on the basis of a Monroe Silent Reading Test. One group was allowed to read the article "Medieval Castles," a short selection of historical material, a single time. The other group read the same article twice, measures having been taken to secure both a single and a repeated reading. The results indicated that as far as these groups were concerned the median scores of the single-reading and the two-reading groups reveal very little, if any, superiority for the two-reading group. A study of paired individuals showed that more individuals in the two-reading group excelled their controls in the single-reading group than the reverse. The average per cent of superiority of the two-reading group was approximately 6.2 per cent of the total of possible ideas in the article on immediate recall and approximately 8 per cent on delayed recall. A study of the rates of reading seemed to show that the two-reading group, on both readings, read faster than the single-reading group. This suggests that the single-reading group may have read carefully and that the two-reading group read rapidly through the first time and then reread in the same manner to check ideas.

Significance of the Yoakam experiment. — This experiment suggests the possibility that rereading of the undirected sort may add a slight amount to the value of the original undirected reading, but the amount is so slight that other methods of study would doubtless excel the rereading by a considerable amount as suggested by Germane. The experiment throws doubt upon the practice of telling children to reread without

giving them any specific direction. In the absence of any better methods in directing study, it is doubtless wise to cause children to reread, but to continue to reread three or four times is of doubtful value. The first reading adds far more to previous knowledge than the second reading. A directed reading adds far more than an undirected reading. Doubtless training in rapid and efficient reading would result in far larger gains for the first reading and show a much greater superiority for the directed reading, the directed summary, and other forms of attack upon the problem of thought-mastery. Teachers must realize the importance of this problem and begin to make assignments in study which direct the work of the children along economical lines.

Probable types of rereading used in study. — Although much of the material in the following paragraphs has been gained from analysis of the writer's own practices and from empirical evidence produced by others, it is nevertheless worth while to speculate, in the light of what has been noted, upon the probable types of rereading used in study.

The most common practice of immature students in study of textbooks is probably unsystematic and rather purposeless rereading. Some students in the grades hit upon the practice of reviewing mentally each paragraph after the first reading; some read through once and then reread in an attempt to fix more firmly the ideas which were not grasped fully the first time. The writer, as a high school student, hit upon the plan of writing down in order the main points of the material

read to fix them in memory and found this an efficient practice. Usually, however, as was shown in Chapter III, the ordinary grade pupil, untrained in study, does not use such methods. Many young children practically commit material to memory verbatim, as observation of almost any group of students in the elementary school will show. In the old type of memory school the noise of study was generally considerable and children may even now be observed gazing into vacancy and repeating in a whisper the words of the text open on the desk before them. All too many older students work in the same manner. As the child becomes more mature, if he is a particularly intelligent child, he may hit upon a plan which includes rapidly reading the material through once and then more carefully reading particular parts which were observed to be difficult during the first rapid reading. Mature students sometimes read with the problematic set of mind, keeping their attention concentrated on some such question as, "What new material is there here?" "What problem does this material answer?" or "Is this material worth while?" Other mature students may distribute the reading by giving a first careful reading and then by later reading rapidly a second time to fix facts which have not been thoroughly retained the first time. Members of an advanced college class, some of them graduate students, reported to the writer that they usually read material once carefully in preparation for their discussion periods and that they found that the time required for other subjects as a rule prevented their reading more than once. The writer's

own experience seems to indicate that the practice followed depends upon the nature and difficulty of the material. Some material is best handled by a single rapid reading. Other material needs skimming and then a more careful reading of parts. Some material requires careful briefing for complete mastery. Some material must be read again and again over a considerable period of time if it is to be retained and used for particular purposes. That training in rapid and efficient reading would promote greater economy in study practices, even for mature students, the writer does not doubt. This training given in childhood would doubtless be far more efficient than if it were delayed until the high school or college period.

What is the effect of rereading without specific purpose? — There are a number of interesting problems in connection with rereading. The one given under the caption for this section is a very pertinent one. The data cited in this chapter by Germane and Yoakam seem to indicate that reading without specific direction is not economical. *A priori* evidence would also support this idea. Introspection will convince the reader that a highly specific purpose produces results and that mere unmindful repetition is wasteful. Attention is slack in undirected reading. If the reading is to be successful at all the reader must either be directed by his own interest in the material or be furnished with a motive by the teacher. The furnishing of motives is particularly important with younger children. The mind soon tires of purposeless and unproductive reading. Such a practice leads to the reader's eventual

dissatisfaction and unhappiness. This will finally result in his refusal to apply himself to the task in hand or in careless and inefficient work. It is highly important that specific purposes in reading and study be furnished the child in his earlier stages of learning and that he be trained to find such purposes for himself later.

How necessary is it to reread interesting material? — Meumann stated that "connected material and familiar material is easier to memorize than incoherent or nonsense material." [1] Interesting material too, needs far fewer repetitions for thorough mastery than material of a difficult or uninteresting character. Judd and Buswell's studies of the eye movements of those reading different kinds of materials explain the physiological basis for the ease with which materials are read when they are interesting and simple, and for the changes in the physical adjustment necessary when the content of passages becomes difficult. The simple statement that it is unnecessary to reread simple materials is suggestive but not conclusive. Further studies will show the probable types of adjustment needed for materials of different degrees of difficulty and will enable the teacher to direct the pupils' reading of these materials with far greater accuracy and effect. In the meantime, the data gathered already suggest that few repetitions are necessary for complete mastery of simple narrative material; that increased repetitions, or better methods of directing the reading become necessary as the material increases in difficulty. This is the fundamental reason why it is wise to suggest that

[1] *Op. cit.*

children in the early and middle grades read much easy material in order to develop speed and comprehension rather than to spend an undue amount of time on analytical study of a few types.

It may be said in this connection that when the reader is perusing material of a highly aesthetic nature for the emotional reaction to be gained therefrom or for the enjoyment he gets from the visual imagery, that it is immaterial how many times he rereads such material. He will continue to read and reread as long as he gets pleasure from the reading. However, even in such situations the ultimate results of the repetition will be either complete verbal mastery of the material, or a lessening interest due to familiarity with the ideas. One's sensibility to beauty becomes dulled after too long-continued contact. In other words, there is an upper limit to the amount of rereading of even literary material for pleasure. How much more true this must be, then, of factual material which is read for information or instruction only.

How much rereading is advisable in memorizing? — Within recent years much has been said about methods of memorizing. This problem is related to methods of rereading. If one wishes to memorize the essential ideas in a prose selection, it is probable that, ordinarily, much less repetition is needed than if he wishes to memorize it verbatim. It is well known that if the object of the learner is to memorize for oral reproduction oral methods are best. Learning by wholes is more economical for short selections than learning by parts; and for longer selections it is economical to

break the selections up into their constituent parts, learn each part as a whole, and then practice connecting the parts. The amount of repetition needed for memorizing the ideas in logical material has not been fully determined. It may be said to depend upon the native retentive capacity of the learner, the nature and value of the material, the amount of practice which the learner has had, and other factors. Young learners should need more repetition than older and more practiced learners as a general rule. Practiced readers who have been highly trained in thought-getting will need few contacts to enable them to memorize ideas. Trained adults are skillful in getting the essential thoughts in a single reading. Children should be encouraged to develop this ability, and specific training should be given them.

Suggestions for developing the ability to get ideas with few rereadings. — In order to develop the power to read informational material efficiently with few rereadings, it is necessary that the teacher attack the problem directly with the children. It is first necessary to get the children interested in the problem and then to provide specific training in rapid and accurate reading. The following suggestions are given in a tentative way for the development of ability to read accurately and precisely without endless, inefficient repetition.

1. Show children by actual measurement that it does not pay to reread purposelessly. Give them two similar selections, having first prepared tests of equal length and similar in kind. Let them read one of the selections carefully once and then give them the test

on that material. Now give them the second selection, allowing them to read it twice. Give the test on the second selection. Score the papers and compare the results. You may also allow them to reread one of the selections each day for several days until they have practically mastered the selection. It will not be hard to show that the second and third readings are comparatively non-efficient in adding to their knowledge.

2. Give children frequent reading exercises which involve reading the material once. Measure the effectiveness of their reading and show them whether or not they are improving.

3. Always have children read with definite purposes in mind; this means that you must make a clear assignment when you ask them to do the work type of reading.

4. Teach the child to concentrate on reading material by giving him frequent exercises in reading under time control. This encourages rapidity and precision in reading if the comprehension of the material is always checked.

5. Take care that the eye movements of the child are properly trained. Bad eye movements make rapid, efficient reading of this sort difficult, if not impossible. Give rapid reading exercises to children who need them.

6. Begin with simple easy material, gradually increasing the difficulty of the material and decreasing the number of contacts until pupils develop skill in reading material a single time that at first required two or three readings.

7. Teach the children to make a distinction between

material that needs careful analytical study, normal reading, or a rapid single reading. Give directions appropriate to the material.

8. Test the results of reading, keep records, make graphs, and get children interested in improving their own records.

Ability to read efficiently with few rereadings may be developed by practice just as any other specific ability that is needed by children.

SUMMARY OF THE CHAPTER

In this chapter the importance of profitably spending time in repeated readings has been pointed out. Undiscriminative rereading has been shown to be uneconomical as a means of deriving thought from the printed page. The probable effect of rereading without specific directions has been shown to be very slight. Directed summarizing, directed reading, and reading with specific purposes of various sorts have been shown to reduce the necessity for repeated readings and to add to efficiency in thought-getting. Data from the laboratory experiments of psychologists and from schoolroom experiments with groups of children reveal much that the teacher may use to improve the study practices of children. Specific training in a single reading and in various types of directed reading will result in greater ability among children to read and retain, and will reduce the number of repetitions necessary before mastery is attained. Specific suggestions are given which will lead to a development of study efficiency through reading.

SUGGESTIVE PROBLEMS

1. Should the teacher ever say, "Read your lesson through rapidly once and then mentally summarize the important paragraphs." Why?

2. Is it necessary to give such specific directions to upper grade and high school pupils as to children in the lower grades?

3. Tentatively draw up a series of suggestions for children to follow in reading materials in literature, geography, science, and nature study. Attempt to make a numbered list of such suggestions.

4. To what kinds of reading do the suggestions given in this chapter apply?

5. What danger can you see in directing the reading of children too specifically?

6. How would you develop initiative and independence among pupils who are trained specifically for definite kinds of reading?

7. How will untrained pupils develop the abilities which are discussed in this chapter?

SUPPLEMENTARY READING

1. FREEMAN, F. N. — *How Children Learn*, Chapter X. Houghton.

2. GERMANE, C. E. — "The Value of Summarizing as Compared with Rereading the Same Article," *Twentieth Yearbook of the National Society for the Study of Education*, Part II, pp. 108–12.

3. GOOD, CARTER V. — "The Effect of a Single Reading Versus Two Readings of a Given Body of Material." *Journal of Educational Method*, V, pp. 325–29, April, 1926.

4. MEUMANN, E. — *The Psychology of Learning*, Chapters VI, VII. Appleton, 1913.

5. YOAKAM, G. A. — *The Effects of a Single Reading*, Chapter VII. University of Iowa Studies in Education, Vol. II, No. 7.

CHAPTER X

Habits as Outcomes of Training in Reading and Study

The object of all training in how to read and how to study is to give the individual command of all those habitual reactions which will make these processes efficient. Whether he is trained or not the individual will form habits. It is the task of the school to make the formation of good habits easy. But, first of all, teachers themselves must have clearly in mind what these fundamental habits are. For this reason, an effort will be made to enumerate the principal habits the formation of which should be the objective of training in reading and study. The possession of these habits should be the criterion for judging whether or not a student is efficient in study. They may be said to represent, taken as a whole, an ideal picture of the characteristics of a good student.

The habits as listed are not each separate and distinct in all respects from each of the others. They overlap to some extent, but it is believed that at some time or other each is brought into focus as a determinative factor in successful study. At least the list is suggestive of what should be in the conscious mind of every teacher as a goal toward which her efforts should be aimed.

Attention. — The first prerequisite to success in any type of work is ability to attend. This of course is equally as true of reading and study as of playing golf or baseball. Much reading fails of its purpose because the attention of the reader is only half-hearted. Failure to attend may be due to many causes but the most prevalent are probably neglect by the teacher to adapt the reading material to the needs of the pupil, the attempt to deal with technical matters to the exclusion of proper emphasis upon the thought and worth of the material, and failure to direct the study by careful assignment. Good habits of attention may be encouraged in reading for study purposes by fitting the task to the needs of the child and gradually increasing the difficulty of the task. Attention is not ordinarily a difficult problem in silent reading of the work type because of the high degree of interest engendered among children by means of speed and comprehension exercises, action and direction exercises of more or less dramatic type, keeping of reading scores, graphical presentation of the results of tests, and similar definite and concrete devices. It is, of course, recognized that intrinsic interest in the material itself is always an essential factor. Reading is a thoughtful process under such conditions and it proceeds constantly for definite purposes; it therefore challenges and holds the attention of the child.

It is particularly noticeable that when children are given a silent reading test, formal or informal, they concentrate and work as at no other time. The very nature of speed and comprehension drills calls for a

high degree of concentrated attention. And when children are given a problem, or an assignment in the textbook, and are told how to read it, how to utilize certain rates of speed, and to expect a comprehension test at the end of their study, the effect is to increase interest and hence attention to the work.

The habit of attention in the study type of reading is therefore best formed, perhaps, where there is something definite and interesting to do that meets some definite need of the child. But attention in study will be improved also when the child is possessed of all those skills that are essential in study. Insure the child's success by carefully developing his ability to study, to use interesting and valuable materials, and to study for definite purposes — these measures will insure the development of the habit of attention in most study situations.

Liking to study. — There must be an habitual attitude of liking to study if children are to succeed in it. Making study as unpleasant and difficult as possible is a sure means of encouraging students to fail in it. The attitude of liking study is encouraged by means of efforts on the part of the teacher to present study in a favorable light and to make the child successful in it. Persistent failure in study situations leads to hatred of it and eventually to refusal on the part of the child to apply the mind to books and other forms of learning. Training him to read skillfully, accurately, and for definite purposes helps to prevent failure in study situations and thus is a direct means of increasing the child's liking for study.

Persistence. — The habit of persisting at a task until it is completed is essential for successful study. This characteristic seems to depend to some extent upon inherited tendencies. It may be encouraged, however, by taking care that the child does not meet with a large number of difficult tasks at the beginning of his experience with reading and study. It may be, of course, that this ability depends, too, upon the kind of task and the particular aptitudes of the individual child. We may succeed in getting the child to persist at the wrong things quite as easily, or more easily, than at the right things. In general, persistence in study will be greatly encouraged and most easily obtained by insuring in so far as possible that the child shall succeed at what he undertakes.

Acquiring good mechanical habits in reading. — To be successful in study of the book type the child must gradually acquire certain habits which pertain to the mechanics of reading. Proper eye movements, absence of lip movement, a wide span of recognition, and accuracy and independence of recognition of words as well as of thought groups, must be formed. The presence of good mechanical habits is essential. Without them the pupil must be greatly handicapped all through his school life. Such habits are developed through the oral and silent reading program of the primary and intermediate grades. They represent the groundwork for effective study habits.

Reading for thought. — The habit of reading for thought instead of reading words must be early established if reading is to be profitable either for recreation

or work. This habit is established in the primary grades by stress upon thought as the aim of reading. The child must not become habituated in thinking of reading as a mechanical word-pronunciation process. Interpretation of thought must be stressed as the main objective of reading, and mechanics must be considered only as a means to an end. Good silent reading emphasizes interpretation of thought constantly by stressing objective forms of checking comprehension and by insisting on accurate thought-getting in reading of all sorts. For this reason ample time must be devoted to silent reading in the early grades.

Studying for specific purposes. — The habit of asking himself, "Just what shall I read this lesson for?" "Why am I to do this task?" must characterize the efficient student. Much aimless studying is done because students have never formed the habit of working for definite ends. The teacher must train the child to read for a variety of specific purposes, such as, to get the main thought, to judge the worth of the material, to see if there is anything new in the material, to collect ideas for a report, to answer a question or problem, or for some other definite purpose. The practice of reading with such purposes in mind will result in economy in expenditure of time. Some well-known readers, among them Gibbon and Webster, have said that they formed the habit of always setting a problem before reading anything, with the result that what they read had greater meaning and was more easily assimilated. In the absence of definite purposes, the child falls back upon the time-worn expedient of reading and memo-

rizing the words of the author for oral reproduction. This still remains perhaps the most common specific purpose for study. It must give way, however, to the habit of reading for other purposes if study is to be efficient.

The earlier training of the pupil to study for specific purposes must be carefully directed. The assignment must indicate the definite purposes, or objectives, for which the teacher wishes the child to study. Practice in reading for each of the definite purposes mentioned in the preceding paragraph must be begun early and continued long. Definite aims of an intelligent type must be set for each reading task required of the child until he comes to have some judgment in regard to the selection of purposes for himself.

That specific purposes make reading and study effective has been shown by experimental research. Germane, Bird, Beauchamp, Peterson, and Yoakam have presented evidence which emphasizes the importance of judicious direction in work of this type. Undirected study always is less efficient than the specifically directed kind.

Questioning. — The habit of questioning the material which one reads has been stressed by Wiley[1] and others. The attitude of mind which causes the reader always to ask mentally, "What question does this paragraph answer?" "What is the main thought here?" "Is this true or false?" is essential to study which rises above slavish acceptance of all that is found in print.

[1] Wiley, J. A. *Practice Exercises in Supervised Study and Assimilative Reading.* J. A. Wiley, Cedar Falls, Iowa.

Specific training in formulating the question the paragraph answers, and other similar devices, will help to develop the habit of reacting to the material which is read rather than of passively accepting it as it stands. This questioning attitude should be encouraged and developed if it is desired to make the individual student somewhat original in his thought. The propensity of children to ask "Why?" and "What for?" should be carried over into their reading and study.

Visualizing. — In certain forms of reading and study the ability to visualize is essential to clear understanding of the material. The student must be able to form, with more or less accuracy, the pictures which were in the mind of the author as he wrote the material. Wiley gives suggestions for training in this ability in his excellent little book. Teachers may profitably give children exercises in illustrating the thought of the chapter or section as an occasional assignment and assist them to make their mental pictures more accurate. This tendency to visualize seems to be stronger in some children than in others but it can be developed in most children by specific training. The habit of visualizing will enrich such forms of study as geography, history, nature study, and other subjects where much concrete detail is to be found.

Supplementing thought. — McMurry [1] lays great emphasis upon the importance of supplementing the thought of the author. The reader should be able to draw upon his own past experience to bear out the truth or falsity of the ideas that are being presented in print.

[1] *Op. cit.*

Supplementing the thought presented from one's own experience adds greatly to the understanding of the principle and helps to fix it permanently in memory. Supplementing the thought also increases the individual's interest in his reading; it makes him more active toward that material and thus more likely to understand and use it. Incidentally it gives to the teacher a surer gauge of the reader's understanding.

Recording ideas. — The habit of recording ideas accurately as an aid to understanding of these ideas and their retention for future use is important in successful study. It may be, as some think, that we fear to trust our memories sufficiently and that the notebook is an unmitigated evil, but it seems more reasonable to believe that the habit of discriminative notetaking is an excellent aid to mastery of thought and that it furnishes an indispensable record of one's own mental growth. Habits of outlining, summarizing, making written reports, drawing sketches, graphs, charts, and in other ways recording the results of one's reading and study are excellent aids to productive work. Which of the devices is most effective, or what combination of devices is most effective, we do not know; scientific study has not yet been able to attack the problem. It may be believed, however, that on the whole these devices have distinct value to the student. They help for one thing, to clarify thought. They assist in making the results of thinking more permanent. The habit of making intelligent records is, then, an essential in study and is worth developing.

The proper method of developing this habit is by direct training in each type of ability needed in recording.

The questioning mind. — The tentative attitude toward the opinions of writers as expressed in print has been stressed by many educational writers for a number of years. The student must have the habit of regarding with suspended judgment that which he reads until further corroborative evidence has been gained. This is a necessary attribute of the student who is more than a memorizer of words. The questioning attitude must be encouraged in reading of the study type in almost every case except, perhaps, when the material is of undoubted authoritative nature and is merely a statement of facts that are known to be true. Actually, however, there are comparatively few statements of this sort, and in the spirit of the searcher for truth, one must encourage openness of mind toward varying opinions for fear that the tendency to the reverse attitude will continue to triumph as it has for so long. The reason why the school of the memorizing type does not develop open-mindedness is because the pupils in such a school get no exercise in it. In the problem-solving school, however, a better condition exists. In the latter, children are constantly consulting different books of reference and they soon find that references do not agree. They thus come to develop an attitude of tentative-mindedness and are more reasonable in their statements of fact than pupils who implicitly memorize and believe a single textbook. Such an attitude is essential in study of the higher type.

Evaluating. — The habit of evaluating the worth of what is read is characteristic of the work of master students. Recent writers have stressed constantly the necessity of developing this habit among children. The traditional practice is to read and mark what an author has to say and to remember and reproduce that material without any feeling of responsibility for thinking about it. This attitude is entirely admirable in a school in which it is held that the textbooks are the last word on any subject and that anything which is written in a book is unquestionably true. To develop it in the pupil is, however, to make him narrow in thinking and susceptible to the arguments of any demagogue who may appear in print. The better practice is to give the child opportunities to exercise his judgment as to the worth of the material he is studying or reading. The student is often asked to read a selection for a definite purpose and to judge as to whether or not the material answers the purpose for which it was read. In schools in which much reference work is used, pupils are encouraged to read and compare references and to form judgments as to which references are most worth while. Constant practice in this kind of reading in the reading class, carried over into the study situations involving content materials, should result in greatly increased mental independence on the part of children and should develop that tentative-mindedness which is necessary for real study of the reflective type.

Effective use of rate. — Knowledge that rate of reading is important in study may be given a child but if

the habit of reading rapidly and effectively is not developed, it will be useless to teach him when to use the various rates. The child must be trained by the teacher of reading to such a point that he can read ordinary material at rapid rates and very accurately. His use of rate may be further perfected by teaching him the importance of using the skimming rate in giving the material to be read a preliminary rapid survey for the purpose of finding out on what points to spend his time most profitably. Knowledge of the importance of change of rate and practice in using various rates will make the bright student, at least, a very adaptable reader. This habit can be used by the skilled reader to economize greatly the time necessary for effective study. It should be purposefully developed by the teacher of silent reading.

Using books to answer problems. — The untrained individual, when confronted by a question of fact or by a problem of any sort, will instinctively turn to someone else to help him answer his problem or question, or to answer it for him. This habit — if it is overused — is harmful because it hinders development. Many people, though reference books and libraries be all about them, make no use of such materials because they have never formed the habit of consulting them. This habit should be developed by a series of exercises in finding answers to problems and questions and involving training in the use of the dictionary, encyclopedia, magazine index, and other reference material. Such exercises should extend over a period of years. The habit of consulting reference material will be of undeniable benefit in independent study and thinking.

The individual is unlikely to become an independent student unless he has such training.

Reading informational books extensively. — The habit of reading informational books and magazines extensively will greatly enrich the life of the average person. Such reading is essential to successful pursuit of many kinds of endeavor in a modern world. Practice in reading informational books leads to greater ease in reading them. The best results are obtained in study when the student has learned to read such books rapidly and extensively. In the case of young children these books should be easy to read and well illustrated. They should supplement school subjects as well as deal with other fields.

Following directions. — In certain forms of study the habit of following directions is essential to success. When the pupil is performing an experiment or a problem in mathematics he must be accurate in doing what the manual or textbook tells him to do. Indeed, the assignment is quite often a set of directions to be followed. Accurate following of these directions insures success; inaccuracy, failure. Many of the recent tests in reading have been tests of this ability. Exercises in following directions of increasing difficulty, spread throughout the grades, will insure that children acquire this skill.

Memorizing. — The habit of economical and accurate memorizing is essential to effective study even though there is less emphasis upon it now than formerly. Rules, laws, principles, facts, dates, and the like, must still often be memorized. Economical mem-

ory work should be developed gradually by specific training as suggested in Chapter II.

Reviewing. — The habit of systematic review is one of the best means of accurate and economical memorizing of either words or ideas. Many students fall short of success because they are too indolent to review. This matter has been touched upon in Chapter VI.

Effective reporting. — Since the aim of study is often to prepare for either a discussion or a written report, effectiveness in reporting must be emphasized until habits of reporting efficiently are formed. This has to do with oral language and written composition perhaps to a larger extent than with reading as such, but since the two are used in study, they may be brought together here. Accurate oral and written reporting must become habitual for effective results in most kinds of study.

Selecting the right method. — Through continuous training in methods of study, the student must come to select habitually the right method for the particular purpose he has in view. He must know whether to read rapidly or slowly the material assigned to him — that is, whether he needs the main ideas or the details; whether to summarize mentally or in writing; how many times to read the material; and other things which will enable him to be economical and effective in his work. The habit of using the right tool for the particular purpose will characterize the mature student. This ability will be obtained by a long period of training in the selection of proper methods for specific study purposes.

Independence. — The aim of the good teacher is to make her pupils independent of her. The student who has no self-reliance cannot go far. Hence, it is important that a habit of independence and initiative be formed. This is possible if the teacher will require the student to find the answers to his own problems and perform his own tasks.

Correct physical habits. — Practically all writers on study for a dozen years have devoted much space to an explanation of the importance of physical conditions in study. The importance of having a place to study, of the right posture, temperature, and light, as outward factors in study, and of sufficient sleep, good nutrition, etc., as further health measures, has been pointed out to teachers again and again; but they have not been sufficiently taught to pupils, or if taught, have not been related to efficient study. It would seem desirable that children be made to realize the importance of physical condition in study and that good habits be constantly practiced in reading and study situations. Teaching about correct posture, light, etc., in the health lesson will not be sufficient to insure that correct habits be practiced in the geography or history study periods. These habits must be practiced in the natural setting until they are formed. The teacher of reading, although concerned with other matters which have to do with effective study, must also be responsible for correct physical habits and every other teacher must share this responsibility.

The writer would suggest that pupils be given specific training exercises on reading material that has to

do with physical habits in study and that special effort be made to motivate the using of these habits in study both in school and out. The teacher should follow the matter into the home and help also to improve study conditions there. She must insist upon the reality of the influence of physical condition upon mental work and not be satisfied until such knowledge is taken from the academic realm and put into actual use. A few general rules read to children in a casual fashion will accomplish little. The teacher of reading, if there is one, may well take it upon herself to see that such knowledge is applied in the reading situation and to encourage its application by other teachers.

SUMMARY OF THE CHAPTER

An examination of habits desirable for study reveals that many of these habits have to do with reading and that good teaching of silent reading is a systematic way of establishing them. Among the habits that the student should attain are those of giving attention, liking to study, persistence, using good mechanics of reading, reading for thought, studying for specific purposes, visualizing, supplementing thought, recording ideas, open-mindedness, evaluating, using rate effectively, using books to answer problems, reading informational material extensively, following directions, memorizing, reviewing, effective reporting, selecting the right method, independence, and correct physical habits. Many of these habits will be formed in the process of teaching children to read comprehendingly. Many others can be brought into effective focus by

having exercises in the reading period which teach the skills involved and which prolong the training sufficiently so that good habits are formed. The teacher of silent reading may well be the one to see that knowledge of how to study in reading is put into a practical concrete system of exercises and that these exercises are followed through in the classes of teachers of content subjects. If somebody is made responsible for seeing that these habits so necessary for efficient study are exercised, the habits will then be formed. Casual incidental teaching will not make for efficient study habits.

SUGGESTED PROBLEMS

1. What habits formed in learning to read are directly useful in study?
2. Why should you not leave the teaching of how to study particular types of subject matter to the teacher of that subject matter?
3. Why hasn't the material that has been written on how to study been more efficient in bringing children to study effectively?
4. Defend the soundness of the assumption that a child may be interested in how to study.
5. Should the child be interested only in the outcomes of study — the ends and aims he wishes to accomplish? Why?
6. How can you call the attention of the child to *how to do* a particular kind of studying?
7. What effect would an analysis of all the habits necessary for effective study and the organization of a series of exercises in the silent reading period which would train the child in the formation of these habits, have upon the preparation of a child for effective study in other situations?
8. What would be necessary in addition to the above to insure that the child be an efficient student of history, geography, or other subject matter?

SUPPLEMENTARY READING

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CHAPTER XI

Attitudes Essential to Success in Reading and Study

The mental attitude. — In the preceding chapters certain factors involved in successful reading and study have been discussed in detail. These may be classified as skills, knowledges, and habits. Among the skills discussed, have been a detailed list of specific silent reading skills used in study situations, methods of reading and study, skill in use of books, the single reading, and rereading. Knowledge or information has been incidentally taken up in the same chapters. Habits as outcomes of training in reading and study were then listed and explained. In the present chapter one other factor that is regarded as important in the formation of study and reading habits will be discussed in preparation for the presentation in Chapters XII, XIII, XIV, and XV of a definite program for the development of ability to read and study in the elementary grades. This factor is the mental set or attitude which determines whether or not the individual will engage willingly and whole-heartedly in the act of reading and study.

The importance of right attitudes toward reading and study. — The mental set of an individual toward any type of activity determines to a large extent what he will do with it. Given a favorable attitude toward

study, the individual will learn to study; and, of course, the opposite is true. Many children fail to learn to study because they dislike either the teacher, the schoolroom, or the pupils with whom they associate and not because of any lack of ability to gain the essential informations and skills needed in study situations. These attitudes are, of course, properly listed as among mental habits essential to study, and are mentioned briefly in Chapter X. But they need further definition and clarification than has been given them. They must be taken into account in considering the detailed attempt to teach children to study as suggested in Chapter XII and the chapters following.

The fundamental attitudes in successful study. — The writer has enumerated the desirable attitudes which affect study favorably in a preliminary way as follows:

1. Interest in school activities.
2. Willingness to work.
3. Admiration for those who do good mental work.
4. Pride in achievement.
5. Desire to be of service to others.
6. Willingness to accept responsibility.
7. Perseverance.
8. Shame at failure to do one's best.

These are seen to be mental attitudes or habits of reacting, including both intellectual and emotional elements, that are essential in most work situations. They lie at the basis of good character. Failure to regard them as basic in the formation of good reading and study habits will result in many unexplained fail-

ures among children to develop ability to do the work type of reading. The writer holds that these attitudes may be developed systematically by paying attention in arranging the school program to the basic underlying conditions of learning and by certain direct measures which are suggested in detail in the next section.

Principles underlying the formation of good attitudes toward studies. — Attitudes of children are affected to a large extent by their early contacts with schools, books, and the process of education. If the school has the right atmosphere and stresses the right ideals, children will form attitudes of interest and pleasure in doing the school work. Whether or not such work is pleasant or unpleasant will depend quite largely upon the manner in which the school utilizes the instinctive desires of children for activities of various sorts. If the school is organized for adult purposes only and if the activities are poorly selected the children may, and many do, get very early an attitude of dislike and distaste for the educational program. If on the other hand, the school in its attempts to minister to the instinctive desires of the child, follows only the whims of the child, it will neglect many things that are of fundamental importance to the work of adult life. It is believed by some writers that the best preparation for adult life is to allow the child to meet his own needs during childhood in his own way. Others think that the activities in which the child should engage must be carefully selected by the school in such a manner that they lead on definitely to desirable activities later.

That fundamental attitudes toward life are formed very early in the child's career will not be denied. Some believe that the pre-school period is the period of greatest importance in habit formation and that permanent attitudes toward religion, morality, and other fundamental things are to be traced to this period. It is certainly true that children very early form their impressions about school and its activities, and that early impressions are very strong in determining later attitudes and activities. The school wishes to develop certain attitudes toward the work it requires children to do. It would seem essential that it should take into account the pre-school experiences of the children and that it should attempt to make the break between school and pre-school life easy and natural. Further, the school should be most attentive to the formation of proper attitudes toward its activities in the early years because of the strategic importance of this period.

Some of the principal activities which the school develops are those which have to do with books and reading. Whether or not these are natural activities for the child has not yet been fully established. Some writers, notable among them Dewey and Patrick, have thought that children should not be asked to engage in learning to read until some years after the time at which they are usually required to begin at present. Many other activities of the school are thought to be somewhat unnatural and foreign to the child's nature and his needs. Others believe that by utilizing the natural interests of the child, he may be taught to read

and write without difficulty. Some think these subjects must be approached indirectly through projects. Others think that there is no necessary conflict between the child's native capacity and interests and the problems of learning to read, write, and spell, and of mastering the fundamental facts of arithmetic, geography, history, and science. The fundamental thing is to study the learning difficulties and problems in connection with these subjects and to cause the child to meet these with success. Satisfaction in accomplishment will bring about good attitudes toward them. The writer confesses to a belief that the latter point of view seems the better.

Direct and indirect methods. — Mental habits which enable children to become good readers, thinkers, and doers of useful things are developed both directly and indirectly. The direct method of developing the right attitude toward desirable activities is to teach children what the right attitude is and then to encourage them to assume it. For instance, it is desirable that children have the attitude that books are valuable. One way of developing this attitude is to tell children that books are valuable, have them learn the principle, and then trust that the learning of this principle will make them feel the value of books. The other method is the inductive development of the principle. In accordance with this method, children learn that books are valuable by living in an atmosphere in which good books are constantly used until the usefulness and value of books is demonstrated to them in many specific instances. The latter appears to be the favored method

with young children. The preaching of a series of sermons on right attitudes in study might have some effect on college students but with young children it would be ineffective because it is unchildlike. The better method is so to arrange the school's activities that desirable attitudes grow out of the activities.

It is necessary, however, that teachers have definitely in mind the desirable attitudes that must be developed and that they carefully nurture these by all legitimate means. It is doubtful if children can be introduced to the school as a place of endless drudgery for several years and then be later converted to a love for the intellectual activities in a school atmosphere. The school must be attractive to the child from the first. The teacher should watch the children and attempt to see that each child is happy and contented in his work and play. Play should merge into work activities gradually. But, since not all kinds of activities favor the development of good study habits, the teacher must select from all possible activities those which lead in the direction which the school desires. Attitudes toward the activities involved in study must, on the whole, be made to favor study and thinking. These can be gained with certainty only by purposeful direction on the part of the teacher, and must not be left to chance.

Causes of failure. — The influences which make study unsuccessful are lack of native intelligence, lack of interest in books, unwillingness to read or do other intellectual work, general irresponsibility, poor powers of concentration, lack of perseverance, lack of pride in

achievement, ignorance of how to use the tools of knowledge-getting, and the presence of distracting influences such as undue emphasis upon athletic activities, games, movies, recreatory reading, and other forms of amusement in the school and out. The school must foster a due balance among these various influences which affect good school work. The program should not favor unrelated recreatory phases of school life at the expense of work phases.

Teachers need not preach to children. — It is not suggested that the teacher preach a series of sermons on the value of study, and that she exhort children to take interest and pleasure, to be willing, etc., but that she herself be aware of the need of these attitudes and that she so select her subject matter and activities that children are happy and that they do take pleasure in school, are willing to work, etc. Suggestions to guide the teacher in fostering these attitudes in each grade are enumerated in Chapter XII. The teacher should promote these activities by good teaching. She must also use any indirect methods possible to develop them. Accordingly, in the study of the lives of great men it is not out of place to emphasize the fact that they loved books and were skillful in using them. Neither is it unwise to encourage by praise the work achievements of the child, and to insist upon good habits of work, a sense of responsibility, and perseverance in the tasks undertaken. What the writer particularly desires to suggest is that where opportunities for stressing activities that favor good attitudes toward study arise, they must not be neglected.

SUMMARY OF THE CHAPTER

The mental set, or attitude of the learner, is an important factor in the development of reading and study habits. Unless the learner is willing to act and believes in the activity in which he is asked to engage, not much can be done to train him. In study situations certain attitudes are essential. They may be developed by direct and indirect methods. It seems necessary to foster such attitudes from the earliest grade. Teachers must have in mind the importance of right attitudes and do everything possible to secure their development.

SUGGESTIVE PROBLEMS

1. What distinction is there between attitude, appreciation, and ideal?
2. What distinction is there between habit and attitude?
3. Show that favorable attitudes toward school make good students.
4. Relate an incident which shows that a young child has failed to progress satisfactorily because of an unfavorable mental set toward the school.
5. List some things about the school which children do not like.
6. Give evidence that emulation is a powerful motive in the development of habits of reading and study.

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well be read also as it discusses in a general way many of the problems of this and preceding chapters.)

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CHAPTER XII

A Course of Study in Reading and Study

The need for a course of study. — It has gradually become clear to writers on how to study that a general consideration of how to study is not sufficient to give teachers the necessary basis for improvement of classroom practices. If the principles contained in books are to result in improvement of children's study habits, these principles must be translated into a detailed outline of objectives and activities which the classroom teacher may use as a guide in a definite and specific program of habit formation. Such a program of activities has recently been suggested by O'Hern.[1] He reported the results of a coöperative attempt made at Rochester, New York, to formulate objectives in reading for the grades. The material is also found in the form of a chart which is published by the Board of Education at Rochester. This chart is favorably commented upon by Hall-Quest.[2] He quotes it as an example of a course of study in study. It seems to be generally agreed among other educators also that such an outline of specific activities is very desirable. The writer has been working with this idea for

[1] O'Hern, J. P. "The Development of a Chart for Attainments in Reading." *Journal of Educational Research*, III; 180–94.

[2] *Supervised Study in the Elementary School*, Chapter VI. Macmillan, 1924.

a number of years. In the present chapter an outline is presented. It is based upon the theoretical discussion presented so far in this book, and it is the basis for the detailed discussions presented in Chapters XIII, XIV, and XV.

It is because the teacher is often unconscious of the problems involved in good study that a course of study is essential. In the present chapter, the objectives are stated in the form of activities rather than abstract principles in order that the teacher may have some suggestion of the course to pursue in order to develop the desired abilities. The activities lead to desirable attitudes, knowledges, skills, and habits on the part of the child. At first he is unconscious that there are good and bad ways of doing things. Later he is made conscious of the fact that the method of study is an important factor in success. These activities are graded in such a manner as to furnish a continuous course for the first six grades of the elementary school. The teacher may use them as a tentative guide to help her in developing ability to read and study.

How this course was derived. — It is not claimed for this list of suggestive activities that it is based upon scientific research. Research studies should be made to substantiate the list and to discover needed changes. With the aid of a group of teachers at Johnstown, Pennsylvania, the writer made an effort to devise a course of study for the development of reading and study habits. This course of study was made first by a committee of teachers and their principal. It was after-

ward revised and enlarged by the writer. Doubtless much is owed to the Rochester Chart, although there are additional activities included in the present chart which are not found in that. The plan of organization is believed to present clearly certain elements that the Rochester course of study did not contain. Desirable attainments in study and reading habits are indicated for each grade. This course is offered as a tentative analysis only of the activities which should be developed grade by grade in order to establish a set of permanent study attitudes, knowledges, skills, and habits that will form a permanent part of the equipment of the child and make him effective as a student. The outline of objectives as here presented is given in substantially the same form in which it has been presented to teachers in Johnstown.

An Outline of Objectives for the Development of Ability to Read and Study

INTRODUCTION

Children learn how to study through the performance of a series of specific acts. Study ability depends upon the possession of certain attitudes of mind, certain fundamental knowledges about methods of study and the use of books and libraries, and the possession of a set of skills which enable the child to work with study materials and in study situations. Study of the efficient type takes place when attitudes of mind become habits of thinking about books and study; when knowledge of the importance of study, of the advantage of good habits of study, and of methods of study, is so well-mastered as to influence the conduct of the child

in the study situation; and when skills in the use of books and other reference and illustrative materials have become so habituated as to become automatic. The following outline is an attempt to state what attitudes, knowledges, skills, and habits of study should be developed in each grade in terms of suggested activities for teachers and children.

FIRST GRADE

Attitudes That Affect Study

1. Select the school activities carefully. Make the activities of the school natural and childlike. Study the child to see what his interests are and provide for the satisfaction of those interests.

2. Make it possible for the child to succeed at his tasks by carefully fitting the task to his abilities. This means that he must not be asked to do things that are too hard for him.

3. Make use of the child's natural desire to do something for someone else by allowing him to perform definite tasks about the schoolroom.

4. Utilize indirect influences to create right attitudes toward study by telling the child about great men who have been good students as well as about those great in other respects.

5. Praise the good work achievements of the child. Encourage him to improve day by day.

6. In programs for special occasions and at other times have the child demonstrate his skill in reading, reciting poems, repeating numbers, and in other tasks of the school. This increases his pleasure in his work and gives it a place of importance in his esteem.

7. Do not put the work activities of the school in an unfavorable light by contrasting them with play

activities and making them appear undesirable. Utilize the play spirit in work.

8. Hold the child responsible for perseverance in the tasks begun and require him to finish his work when once begun.

Knowledges about Study

1. Talk to children about books, what they contain, and what they are for.

2. Get them to ask questions and then show them how such questions may be answered by consulting books.

3. Explain that some people get their livelihood by means of work with books.

4. Have them read books with a simple problem in mind as soon as they are able to do so and show them that they can find answers to questions in books.

Study Skills to Be Developed

1. Emphasize reading for meaning in all reading that is done.

2. Give simple drills in reproducing the thoughts of stories.

3. Give drills in following simple directions, dramatizing or acting out simple sentences, matching words and phrases, and constructing or drawing from a simple set of directions.

4. Give speed drills in silent reading, consisting of simple sentences on flash cards which may be responded to by acting, following a direction, dramatizing, or matching words and sentences.

5. Give lessons in reading a story rapidly to answer a question about it.

6. Teach the child how to open a book, how to find a given page, where to find the author's name, and what the parts of the book are.

7. Give lessons in which the child is called upon to reproduce what he has learned from observation of the things around him.

8. Make certain that the mechanics of word recognition are taken care of by judicious use of word drills and phonetic exercises.

Habits to Be Formed

1. The habit of pleasure and satisfaction in the tasks of the school should quickly manifest itself in this grade.

2. The habit of reading rapidly and accurately such simple material as is available should be formed by a considerable number of the children at the end of the year.

3. The habit of following simple written or oral directions should be well set.

4. A beginning should be made in the establishment of good eye movements in reading, lip movement should be decreasing, and the recognition of a considerable vocabulary of useful words should have become habituated by the end of this period.

5. The habit of consulting books for pleasure should be paralleled by some interest in books for informational purposes. The teacher should read from them to answer questions raised by the pupils.

6. The habit of concentrating on reading or other tasks for short periods should be developed by the end of the year.

7. Promptness in going to work and industry in performing a set task should be an objective of this grade.

8. Habits of neatness in the use of books must be developed — the child should habitually open a book correctly, hold it correctly, turn to given pages without difficulty, and be interested in books as useful and beautiful repositories of stories and interesting facts.

9. The habit of being interested in and of observing as accurately as his powers will permit, the objects, animals, and people in the world about him, should characterize the child at the end of this year. The power of accurate observation supplements reading and makes it have meaning.

SECOND GRADE

Attitudes toward Study

1. Continue to exercise great care in the selection and presentation of the child's tasks. See that they are suited to his nature and that they are presented to him in such a way as to arouse his interest.

2. Make it possible for the child to succeed at his tasks by providing him with clear-cut directions as to how the work shall be done and how much of it he is to do.

3. Make use of his natural desire to help others by allowing him to perform tasks about the schoolroom for you and for his schoolmates.

4. Utilize indirect influences to create admiration for good work with books as found in the lives of national heroes such as Washington, Lincoln, and Roosevelt.

5. Praise good work achievements of the child. This will make him wish to do better and make him like the activity.

6. Let the child demonstrate his skill in reading, writing, and numbers as well as in recreatory activities

of the school. This makes him like these subjects and raises them in his esteem.

7. Hold the child responsible for good and careful work and for completing the tasks which he has begun.

Knowledges about Study

1. Continue talks to the children about books: their contents and their use.

2. Distinguish between books that are for play, books that are for work, and those that are for both.

3. When the children ask questions about some matter that interests them, show them how you can find an answer in a book.

4. As soon as they are able, let them read to find answers to their own problems.

5. Give them simple rules about doing work with books such as:

a. Never tear the pages of your book.
b. Do not lay your book down on its face.
c. Always have clean hands when you read a book.

Skills to Be Developed

1. Continue to emphasize reading for thought in all reading that is done.

2. Continue drills in accurate reproduction of stories; add drills in reading a simple paragraph of factual materials accurately and reproducing the thought.

3. Continue exercises in following simple directions, action, dramatization, matching, constructing, and drawing.

4. Continue phrase flashing exercises as in Grade One with material of increasing difficulty.

5. Give simple exercises in reading both narrative and factual material to answer simple questions or problems.

6. Continue instruction in opening the book, finding a given page, and the author's name; explain the purpose of binding, its use, etc., while instructing the child in handling the book properly and holding it for proper effect.

7. Enlarge the useful working vocabulary by proper emphasis upon materials of an informational character. As a rule, do not read to a child anything that he can read for himself.

8. Continue lessons in observation and train the child in accurately describing what he sees.

Habits to Be Formed

1. The habit of liking to study should be formed. Be particularly careful to notice good work. Try to find out what is wrong when a child is failing in his work.

2. The habit of reading rapidly and accurately material suitable for the grade should be carefully checked and children who cannot read rapidly or accurately should receive special help.

3. Directions of a more complex character than those used in the first grade should be readily and accurately followed.

4. A noticeable gain in rapidly moving the eyes across the page, elimination of lip movement, pointing, etc., should be accomplished by the end of this grade. Recognition of a large vocabulary of common words should have become habitual.

5. An increasing interest in books of informational character should have become a habit.

6. Ability to concentrate on a study task for twenty minutes at a time should be well habituated in the majority of the children by the end of this year.

7. The habit of taking pleasure in school activities should be maintained by all legitimate means.

8. Promptness in going to work and industry in working should be checked and measures taken to insure the child against dawdling and wasting time.

9. Habits of neatness in the use of books and materials as outlined in Grade One should be continued and enlarged upon as opportunity permits.

10. Continue emphasis upon observation and try to insure an habitual interest in the world around the child. Get him into the habit of asking questions and discussing what he sees and hears.

THIRD GRADE

Attitudes toward Study

1. Relate the work of this grade intimately to that of Grade Two. See that your program appeals to the child's developing interests but be sure that there is no unnecessary break between your program and that suggested for the preceding grades. Such breaks cause failures and make the child unhappy.

2. Guard against the feeling of failure by arranging for the child to succeed at his tasks. This means that you must study individual children carefully and must make your program fit their needs. You must not require things children cannot do.

3. Develop the desire to help others by giving it an opportunity for exercise. Encourage the child to help you and his schoolmates, particularly in work situations.

4. Utilize indirect influences to create right attitudes toward reading and study by noting the instances in

the lives of great men that show that they were helped to success by their use of books. Let the children read and hear about these incidents.

5. Praise the good work achievements of the child. These need special encouragement and emphasis.

6. Let the child demonstrate his skill in reading and study to others. This will increase his interest and his pleasure in them.

7. Do not put the work activities in an unfavorable light in the school program. Utilize the play spirit — competition, emulation, activity, etc.

8. Hold the child responsible for completion of tasks he has begun but do not give him tasks that are too difficult.

Knowledges about Study

1. Continue talks about the usefulness of books and show how books answer our questions.

2. Encourage children to consult books to find answers to their problems.

3. Introduce good books judiciously; praise them; allow children to examine and use them as a special privilege.

4. Develop with the child a few more simple principles about the best way to study.

a. Work hard while you work.

b. Have a purpose in mind when you study.

c. When you are through studying your book, close it and try to remember what you have read.

d. When you read be sure you do not face a bright light. Let the light come over your shoulder.

Skills to Be Developed

1. Continue to emphasize reading for thought in all reading.

2. Continue drills in accurate reproduction of stories; allow each pupil to read a different story and tell it to the class.

3. Add exercises in reading informational material and reproducing the thought accurately. In connection with problem work in community life, children may attempt to read magazines, pamphlets, etc., for facts to answer their problems.

4. Continue exercises in flash reading. Begin exercises in reading rapidly to find a given fact, word, name of a person, title, etc.

5. Teach the child to use the index, if present in any of his books.

6. Train children to make brief outlines of what they have read and to talk from an outline.

7. Train them to make brief outlines of facts they have learned from observation and inquiry from other people and to make reports from the outline.

8. Train children to read to find the answers to problems of a more complex character than those possible in Grade Two.

9. Complete instruction in opening books, finding pages, etc.

10. Enlarge the working vocabulary of useful words by the introduction of as many factual books of a simple character as you can get to improve your work in community life, health, etc.

11. Teach the use of the alphabetical arrangement of the glossary in the child's reader.

12. Continue training in accurate observation. The results of observations may be reported in the class-

room and children may be shown why their observations are accurate or inaccurate and how to improve them.

13. Give increasing amounts of rapid reading in books as pupils are able to master them.

14. Give increasingly difficult exercises in following directions accurately, illustrating a story or article, etc.; and enlarge activities in dramatizing.

15. Discontinue phonic exercises as soon as children have independence in word attack. Give word drills and enlarge vocabulary by means of much reading of easy material.

Habits to Be Attained

1. By the end of the third grade the child should have an habitual attitude of a favorable sort toward study if the program in Grades One and Two has been followed.

2. The habit of reading rapidly and accurately should show considerable development. Children who have been trained in silent reading should read simple factual material readily. They should habitually read thoughtfully rather than mechanically.

3. Children should be able to read directions from the board for definite tasks to be done. Practice in reading directions rather than in taking oral assignments should be given.

4. During this grade the silent reading rate should generally surpass the oral reading rate and lip-movement should be eliminated among those children who have had silent reading from the first.

5. Books of an informational character should be consulted habitually by this time if only for the most simple purposes.

6. Concentrated attention should be possible for twenty to thirty minutes at a time if tasks are well set and the work interesting.

7. Pleasure in work, promptness in beginning, and persistence in follow-through should be attained as habits if tasks are within the range of the child's interests.

8. Neatness in using books and in written work should still be stressed but the majority of children should be well founded in the elemental habits by this time.

9. Children should habitually exercise their powers of observation and should supplement class discussions readily from outside experience. Increased skill should be shown in this work over that in the preceding grade.

FOURTH GRADE

Attitudes toward Study

1. In this grade refer occasionally to good results in study and how they are obtained. Try to get the children to tell about successful work that they have done, or know about. Hold up good examples for their imitation.

2. Encourage industry and discourage wasting time at work. Remove causes for time-wasting by carefully planning your own assignments.

3. In group discussions, encourage the children to contribute knowledge of value. Try to get them to realize that study is not an individual matter entirely. Many people study because they wish to be of help to others.

4. Guard against assigning tasks that are too difficult for the children or outside the range of their experience.

5. Let children report to others the results of their study of community life, literature, music, poetry, or health. Utilize the fruits of study for school programs, assemblies, and meetings of parents. Let the work be the children's own work, not mere memorized programs of second-hand materials.

6. Encourage pride in the results of efficient study. Lead the children to feel that failure to do study tasks is bad; but do this by suggestion rather than by open and caustic criticism. Lead them to criticize their own efforts and those of their classmates in a constructive way.

7. Secure interest through choice of the proper subjects and activities; secure willingness to work through making the work valuable.

Knowledges about Study

1. Continue to introduce the child to interesting factual books.

2. Introduce a children's encyclopedia as a means of finding out facts the child needs to know.

3. Introduce the dictionary and illustrate its use. Give the child drill in the use of the dictionary.

4. Continue to give information in regard to the use of textbooks as sources of information and show the child the value of good simple accurate accounts of events, persons, processes, etc., in helping him to solve his problems.

5. In simple language teach the child the rules of memorizing; when to memorize by wholes and when by parts.

6. Give the child information as to the physical conditions of study. Teach the value of good health and regular habits, good light, a good study place, good

time for study and such other facts about independent work as will prepare him for home study later.

7. Develop with the child a few more simple principles about the activities in study:

a. Work hard while you work.

b. Have a purpose when you study.

c. Recall frequently while you study.

d. When you wish to remember a thing for a long time recall it again and again for several days.

e. When you come to a word you do not know consult the dictionary.

f. When you wish to find in a book information about a fact, consult the table of contents or the index.

8. Teach the child how to use pictures, maps, charts, and observation in study.

9. Emphasize the value of neatness and speed in handwriting as a help in study.

Skills to Be Developed

1. Continue drills in reproduction; but hold the child responsible for greater accuracy in reproduction; drill on reproduction of factual material in geography, history, science or nature study, and health.

2. Continue rapid reading exercises but connect the exercises with your informational reading. Use books in all class periods for exercises in skimming rapidly to find answers to definite problems or questions.

3. Give occasional index drills of increasing difficulty; ask children to find references as quickly as possible as a class exercise; occasionally give problems for study without definite references.

4. Concentrate on training the child to outline by giving him training in reading paragraphs and stating the main thought in a sentence; then in briefer form. Then give more paragraphs until the child can by himself outline the main topics in a simple informational article.

5. Train children in talking from an outline which they have prepared by reading about some problem or topic; also to outline and talk on the results of their observations.

6. Teach children to keep simple notebooks in which they write the summary of the day's lesson, keep the problems for discussions, and record references and simple outlines given them by the teacher or made by themselves.

7. Train children to find the answers to problems in class as an exercise; then assign problems to be looked up in other books, first by giving definite reference to the books and later by merely mentioning the book and letting them use the index. Train them also to raise questions about the things they see and the things they read.

8. Check up on their ability to use books properly, to find pages, use index and table of contents, and keep books neat and clean. Teach them how to repair a torn page and expect them to call your attention to any book that may have a loose binding.

9. Give additional informational material and enlarge the vocabulary of useful words by word-study exercises before reading, vocabulary tests and drills, and looking up words in the dictionary and encyclopedia.

10. Encourage the child to read as much material of an easy character as possible. Introduce him to biography, simple history stories, interesting travel

books, and other informational material as well as the usual story and other recreatory material for this grade.

11. Continue training in accurate observation. Have children describe both orally and in writing, objects which have been brought into the room. Encourage them to be critical of their own attempts. Make much use of interviews with people outside the school in gathering material on their lessons in the content subjects; encourage accurate and effective reporting.

12. Give flash and blackboard exercises in the following of directions, and write assignments on the blackboard for the pupils to follow in preparing their lessons.

13. Train the child in accurate comprehension of the thought of the printed page by asking him to draw an illustration of what he reads, write down the questions the material answers, write a summary of the material, answer a set of questions on it, construct something for which the directions are given, answer a true-false test, complete a completion exercise, or in some manner show by objective response that he thoroughly understands it.

14. Train the child to write a simple paragraph of prose which results from his observation of the world about him or from something which he has read. This may take the form of a short theme on how to make something, an explanation of a simple process, or the narration of an event. It should be factual rather than literary in character and should do in a simple way what the advanced student is asked to do more completely.

15. Give children exercises in rapid reading which require a high degree of attention and concentration, and show them how much more can be done when working with attention concentrated than when working without.

16. Check up on skill in silent reading by giving any well constructed standardized test. After testing, diagnose weaknesses present and give individual attention to children needing it.

17. Instruct the child in how to call for a book at the library. Teach the use of the call number and how to find the author's name and title of a book.

Habits to Be Formed

1. Unless distractions have drawn the child away from the work of the school or the school has definitely refused to supply his needs, he should, if normal, be habitually interested in study and efficient in it.

2. Rapid, thoughtful reading should now be a habit among the majority of the children.

3. Good habits of eye movement, lack of lip movement, and little mechanical trouble with words should characterize children of this grade.

4. Concentrated work for half an hour at a time should be easily obtained.

5. Some progress in the use of reference books should have been made by the end of this grade, at least to the extent that the child shows a disposition to consult them.

6. The habits of promptness in beginning, neatness in the use of materials, and persistence in study should be well set and require little attention, provided the subjects and activities are suitable.

7. The habit of asking questions about materials read and about things seen should be marked.

8. The child should report with ease from a set of written notes.

9. The habit of accurately following simple directions and studying from a set of problems or questions should

be well formed. There should be little difficulty in assigning a lesson in geography or other content subject in this manner.

10. The child should habitually supplement the work of the text by bringing in interesting materials, such as pictures, maps, books, magazines, newspapers, products, mechanical toys, etc., to enrich the work in the social studies, community life, nature study, and health education.

11. Correct posture, use of light, holding of book, handling of materials, and the like should be well developed by this time.

12. Habits of accurate recording of information, use of the notebook, outlining, summarizing, and of writing themes about the subject matter studied should show a definite development during this year.

13. Thoughtfulness rather than mechanical word pronunciation should characterize the children's reading or the instruction has failed.

FIFTH GRADE

Attitudes toward Study

1. Have individual conferences with children about their study. Take up their difficulties and examine carefully their attitudes in order to prevent, if possible, the formation of unhealthful attitudes toward their work.

2. Make work pleasurable by seeing that it is successful. Select interesting and valuable activities and subject matter. Utilize the spirit of pride and emulation in work.

3. Throw greater responsibility than heretofore upon individual children for following out their particular interests, reading and studying about them. Utilize

these interests by having children report their findings and discoveries to the group.

4. Make much use of individual assignments in the content studies and give children the pleasure of having something to contribute to group discussions. Have special reports in school assemblies on regular subjects.

5. Keep a proper balance between work and play. Do not favor the one at the expense of the other.

6. Allow the bright children in the group to assist the less able with their difficulties in any subject of study.

7. Have occasional discussions of study and its importance, and give commendation to children who have succeeded especially and to the group for general attainments that have been made.

8. Make use of the stories of the success of certain great men due to their efficiency in study. Emphasize the elements which made success possible in each case.

9. Deal with the concrete rather than the abstract; see that all subjects are rich in interesting detail, in demonstration, illustration, construction, observation, dramatization, and physical activity as well as mental activity.

10. Give abundant opportunity for expression as well as impression. Have children write occasional themes on their study, what they do, what interests them, and what difficulties they have. Study those themes carefully to find leads for future activity on your part to keep attitudes good for work.

Knowledges about Study

1. Continue to introduce the child to interesting books that supplement and enrich the subjects of study.

2. Continue training in the use of the encyclopedia and the use of the dictionary.

3. Introduce the statistical abstract as a source of up-to-date information in geography and other subjects.

4. Continue training in economical memorizing.

5. Continue training in the correct physical conditions of study as outlined for grade four.

6. Develop with the child information about methods of study; first teaching the principle and then giving the rule:

a. When you study, begin work promptly.

b. In home study have a place to study; if possible a room where you can have a table or desk to yourself.

c. Have a definite time for study, and study at the same time each day.

d. When you work, do it with intent to learn and remember.

e. Do not apply to anyone else for help until it is absolutely necessary. Form the habit of relying on yourself.

7. Continue training in how to use pictures, maps, charts, diagrams, and observation in study.

8. Teach the necessity of having a specific purpose in study and show how one can accomplish more work when he has definite aims.

9. Continue to emphasize the value of neatness and speed in the making of written reports.

10. Teach the use of outlining and summarizing as an aid to study.

Skills to Be Developed

1. Emphasize skill in silent reading mainly in the content subjects. Distinguish clearly between the

three types of reading (*a*) reading for information, (*b*) reading for practice, and (*c*) reading for enjoyment. Concentrate in training the child to read rapidly and accurately informational material. Keep the time allotment in silent reading heavy; also utilize all opportunities in teaching history, geography, nature study, and other subjects for teaching skills in the use of books.

2. Continue drills in accurate reproduction of factual material.

3. Have children skim factual books to find the answers to problems and to locate new material. Emphasize speed reading in search for information.

4. Continue index drills if needed and employ the use of the index in seeking for material.

5. Train the child how to make a detailed outline of an article using main heads, subheads, numbers, letters, and indentation in properly showing the relative importance of the items in the outline.

6. Continue training in talking from an outline. Teach the child to become gradually independent of his outline by memorizing the main headings and then depending upon review immediately before presentation to make him familiar with the detail.

7. Teach the use of the notebook and drill the children in preparing a notebook. Let them practice keeping statements of problems, outlines of study, summaries of result, illustrations, references, etc. Encourage neatness in the preparation of the notebook.

8. Teach the child the importance of reading and thinking before he attempts to present his ideas, and have him practice reading extensively on a topic which he expects to present.

9. Check up on the pupils' ability to handle books

properly. Teach them how to repair torn pages and how to mend a loose back for temporary use.

10. Teach the child to summarize orally and in writing. First direct the summary by definite problems and questions. Later give practice in writing a paragraph summary after reading each lesson or other material.

11. Teach the child how to review material that he has gone over. Give definite directions for review. Show the benefits, in fixing facts, of review of a systematic character.

12. Train the child to ask questions of the material which he reads; have him formulate questions to ask the class; have children criticize each other's questions and answers.

13. Give drills in finding specific purposes or problems for study.

14. Give vocabulary drills. Teach the use of prefixes and suffixes, and study homonyms, antonyms, and synonyms. Perfect the use of the pronouncing devices in the dictionary. Study directly lists of words and their meanings.

15. Give exercises in extensive reading for the purpose of developing vocabulary. Have children keep a record of new words they meet; encourage looking up new words and recording them in their word books.

16. Emphasize accurate comprehension in all reading and give drills in:

a. Reading to find the answers to a definite set of questions.

b. Reading to complete a completion test on the material read.

c. Reading to illustrate the material read.

d. Reading to supplement the thought of the material read.

e. Memory tests on important facts or principles previously studied.

17. Train the child — if he has not already learned — to get a book from the library, using the call number that has been obtained for him. Teach him what the call number means and how to ask for a book he wants.

Habits to Be Formed

1. By the end of this grade children who have been instructed as outlined in the preceding pages should habitually study with a considerable degree of efficiency because they have had training in certain definite skills. They can read rapidly and efficiently; they know how to discuss problems; and they can make useful outlines and reports. If the subjects they study are worth while they should have definite and efficient study habits of at least the more fundamental types.

2. Rapid, thoughtful reading should have become more efficient. A distinct progress in speed and comprehension should be evident.

3. Mechanical difficulties should have largely disappeared. Children should pronounce new words readily and should habitually use the dictionary in looking up new words.

4. Children should work on interesting problems for half to three-quarters of an hour with effective concentrated attention.

5. Reference books should be consulted without the necessity of the teacher's referring to them constantly.

6. Children should make neat records habitually by this time and should use such records skillfully in discussion and review.

7. Oral reporting from a set of written notes should be effective and easy.

8. The child should show the questioning attitude of mind. He should be thoughtful in his questions and should appreciate that his studies are the means whereby interesting problems are solved.

9. The child should follow a set of written directions with accuracy and be able to prepare a lesson based upon a set of questions or problems.

10. Further skill in supplementing the work of the text should be shown.

11. Further progress in control of physical conditions of work should have been made. The child should check up voluntarily on such conditions before he goes to work.

12. The use of notebooks, outlining, summarizing, and theme writing should be further advanced than in grade four and should be habitual in all subjects where it is necessary.

13. Children of this grade should be different from those of advanced grades only in the difficulty and extent of the tasks they can accomplish. Fundamental habits of work should be efficiently established and should function automatically for the most part.

14. The child should have developed the habit of drawing a book from the library, giving the author's name, the title, and the call number correctly.

SIXTH GRADE

Attitudes toward Study

1. Individual conferences on study should be continued. These conferences should be the periods during which the teacher brings to her pupil personal

knowledge of study and in which she gives each individual that type of encouragement and assistance which he needs. The morale of each individual should be carefully considered and maintained.

2. Utilize the influence of approaching adolescence as a means of arousing the child's interests in poetry, biography, history, and science. Watch him to help him, if possible, if he gets into moral or mental by-paths which detract from effective work.

3. Make the child increasingly responsible for good work — giving opportunities to serve on committees, etc. Encourage his hobbies and make use of them in keeping him contented and devoted to his work.

4. Guard particularly against the introduction of the irrelevant in subject matter and activities. Remember that many influences in the world seem to go contrary to the school in the establishment of good work habits.

5. Introduce the child to the possibility of his selection of a life vocation by taking any opportunity offered for encouraging his interests in useful life activities.

6. Increase the amount of individual responsibility to the group.

7. Make much use of school assemblies, etc., to motivate superior group work. Make children entirely responsible for these.

8. Influence the child's attitudes toward work and study by reading to him and by encouraging him to read the biographies of great men who have succeeded.

9. Have occasional discussions of study problems, difficulties, and successes.

10. See other suggestions listed under grade five and continue to develop them.

11. Try to make every activity in this grade a socially useful and desirable activity. Let each lesson eventuate in something useful. Guard against encouraging bad habits by being lax in your standards, allowing distractions to influence results, etc.

12. Attempt to answer honestly the child's inquiries about what subjects are for, the use of this and that portion of a subject or activity. If you are doing things in your grade that children think useless, it is wise to take steps either to eliminate the activity or to show its usefulness.

Knowledge about Study

1. Continue to open up to the child an enriched world of useful and fascinating materials of study. Show him the opportunities that lie in the library for absorbing and worthwhile reading. Be a guide to good books.

2. Plan your work so that good reference books are constantly used. Give such information about this use as your pupils seem to need. If preceding teachers have done their part, the fundamental knowledge about the importance and use of dictionaries and encyclopedias should be already in the possession of your pupils.

3. Use the statistical abstract, the encyclopedia of statistics, the dictionary of synonyms, *Who's Who in America*, and other reference books to supplement the material in history, geography, and other subjects. Illustrate the importance of these sources and show how to use them. Use them in your own work.

4. In connection with health work, emphasize the importance of physical condition as an absolute prerequisite to good work in school. Have children keep records of work done under good and bad physical

conditions. Relate this to study. Carefully control such conditions in school.

5. Develop additional principles in regard to study and have pupils write the rules:

a. Do not worry about your lessons as you study; that makes it hard for you to succeed and makes good results almost impossible.

b. If you do not feel like studying but feel that you must, sit at your desk and go through the motions that accompany study; determine to study; that will help you to get to work.

c. Before beginning advance work, review the previous work unless your study follows immediately upon your recitation or discussion. Review warms you up just as practice pitching warms up a pitcher before he begins a game.

d. Look through the lesson to be studied; decide which parts need the most time, and give more attention to those parts.

e. Judge as to whether or not a given bit of information is good for the present only, or whether you will need it a long time. Spend the most time on the important facts and principles.

f. Commit rules, definitions, formulas, etc., to memory, if you understand them. If not, seek for a clear understanding before you commit them to memory.

g. If you study at home, or in a study hall, just before going to class make a last rapid review of the important points you wish to remember.

h. Review often those things which you wish to remember permanently; do this for a few minutes every day until you can remember them easily.

i. In committing poems or other items for oral reproduction it is well to read aloud rather than to yourself.

j. Study your own best methods; find out whether it is best for you to begin with the hard or the easy part of a lesson and how you can learn easiest.

k. When you study remember the rules about study you have learned and apply them until you do it without thinking about them.

l. Occasionally ask yourself, "What things am I doing that I should not do?" Try to make necessary changes in your methods.

6. Continue the use of pictures, maps, diagrams, charts, and observation of objects and processes as an aid to study.

7. Continue to emphasize the value of accurate written reports, outlining, summarizing, the use of the notebook, etc.

8. Emphasize as before the value of good handwriting as an aid to study.

Skills to Be Developed

1. In grade six continue to develop those skills outlined for grade five.

2. Require better use of the index and table of contents.

3. Require, in talking from an outline, gradual disuse of the outline except as a means of preparation.

4. Continue to give practice in rapid extensive reading as a good means of preparing for a report.

5. Do not relax care in notebook work. The notebook should be well arranged, titled, contain a table

of contents, references, assignments, pictures, or illustrations, outlines, and summaries.

6. Continue instruction in use and care of books. Study the use of references that are given in the text and teach how to use them.

7. Give practice in the use of the catalog, or card index, as used in the library; and give children drill in finding references definitely given them. Have them look up material in the *Readers' Guide*.

8. Continue drill in oral and written summary. Develop as soon as possible the power to summarize effectively without the necessity for questions or directions.

9. Continue vocabulary drills and word study as outlined for grade five.

10. Continue drills on rapid and accurate reading and test occasionally the development of speed and comprehension. Give exercises in —

a. Reading to find definite references.
b. Reading to answer a specific question.
c. Reading to outline.
d. Reading to summarize.
e. Reading to find new problems.
f. Reading to supplement thought.
g. Reading to illustrate the material read.
h. Reading to formulate the questions the material answers.
i. Reading to reproduce accurately the material read.
j. Reading to answer a definite problem consulting several sources rather than a single reference.

11. Perfect skills developed in the special silent reading period but apply those skills constantly in content subjects.

12. Continue to give practice in rapid extensive reading for informational purposes.

13. Further develop the skills necessary in effective group discussion and in socialized reports, programs, and assemblies.

14. By judicious practice further perfect skills in recording facts in handwriting of suitable speed and quality.

15. Encourage and develop in the child ability to think on his feet about a subject or topic with which he is reasonably familiar.

16. Develop the child's power to express himself in writing as a skill essential in study and encourage this power by suitable praise and reward.

17. Train children to be increasingly responsible for good recitation or discussion, and teach them how to conduct such recitations and discussions by socialized methods.

Habits to Be Formed

1. By the end of the sixth grade pupils who have been through a course of study outlined in the preceding pages should have a definite set of study habits that function automatically for the most part. A summary of those habits would be:

a. The habit of liking study and succeeding in it.

b. The habit of concentrating attention in study and persevering in it.

c. The habit of thoughtful and rapid use of books and other reading material in study.

d. Good mechanical habits in reading — no lip

movement, rhythmic eye movements, and good ability to attack new words.

e. The habit of using books of reference easily and accurately — dictionary, encyclopedia, and reference books of all sorts suited to the grade.

f. The habit of thoughtfully reading material assigned, questioning it, supplementing it, and judging its worth.

g. The habit of recording facts accurately — keeping notebook, writing outlines, summaries, graphing, illustrating, and diagramming.

h. The habit of reporting facts accurately either orally or in writing.

i. The habit of engaging easily and readily in group discussion.

j. The habit of observing persons, places, things, events, and processes accurately and reporting such observations effectively.

k. The habit of thinking for themselves in the light of what they have read, seen, and heard, rather than of mechanically repeating the written or spoken thoughts of others.

l. The habit of observing the physical conditions essential to good mental work and utilizing these conditions in effective study.

m. The habit of adapting such principles and rules of study as have been scientifically worked out to their own individual needs and peculiarities.

n. The habit of regarding work as a social, rather than an individual opportunity solely, and of coöperating with others in worth while social activities of the work type.

o. The habit of regarding life as made up of work and play with each in its proper place, one

helping the other, and neither dominating life to the exclusion of the other.

p. The habit of regarding school work as useful and fascinating, as contributing to present needs, and not essentially as a preparation for some far-off, divine event about which they know little and care less.

GRADES SEVEN AND EIGHT

Grades seven and eight will have the same objectives as grades five and six. The attitudes, knowledges, skills, and habits will be continued and perfected. Little in addition to those suggested in the preceding need be added. The fundamental and crucial things are included in the work of the first six grades for the reason that those are coming to be regarded as the elementary school proper. Lack of time and space forbid the working out of these objectives further. The teacher can utilize the outline for grades five and six as a guide. It may be said that each of the abilities outlined in the preceding pages should be studied, checked, and further developed. Perfection of the use of the *Readers' Guide* and other periodical reference indexes and the making of simple bibliographies can receive special attention in these grades. Continue drill on speed and accuracy in reading, oral reporting, record keeping, discussion, observation, and perfection of other study habits and skills.

Comments on the course. — The course of study outlined in this chapter presents a definite outline of activities that teachers need to utilize in order to develop economically the ability to read and to study. Inquiry among experienced teachers and supervisors in summer school and in extension classes reveals that the

absence of a definite program is responsible for the failure of teachers to develop ability to study. This course supplies a tentative outline which should help to make good the deficiency and encourage teachers and supervisors to embark upon a definite course of action which should ultimately lead to the desired results.

Such an outline as presented here will not, however, be sufficient to secure results in and of itself. It needs development and explanation. In Chapters XIII, XIV, and XV an attempt is made to explain how its suggested activities should be carried on.

How such a course shall be given. — This course may be developed as a phase of instruction in reading, oral and written composition, handwriting, history, geography, and other content subjects. The outline of activities will help each teacher in a departmentalized school to carry out properly her share of the work of training pupils to read and study. Each teacher must assume the duty of seeing that her pupils know how to read and study her subject; she must diagnose weaknesses in attitudes, knowledges, skills, and habits and give remedial treatment for those specific ills which children exhibit. The teacher, as a teacher of reading, of necessity, however, will need to make special provision for the technical phases of reading as they appear in the outline. Supervisors must insist that the entire corps of teachers become interested in and give attention to the program. Teaching the child to apply the skills he learns in the reading class must, after all, be largely done in connection with the traditional subjects

of study. Even in schools that have a special teacher of reading the teaching of children how to study must not be left to her.

In these nondepartmentalized schools each teacher should have this outline, or some similar guide, and she should be held responsible for developing the detailed objectives, for giving the specialized instruction and drill needed, and for securing the application of the knowledges and skills in normal study situations in the content subjects.

A drive in which the entire school engages, with the principal and supervisors leading and showing the way, is suggested as a means of arousing interest, initiating the program, and getting it into operation. Frequent teachers' meetings centering about this problem will help to secure results. A year devoted to intensive work should produce very marked improvement. But the initial drive must be constantly followed up to secure results until teachers are fully informed on the subject.

SUMMARY OF THE CHAPTER

A course of study in reading and study is essential in a plan for developing ability to study. Such a course should contain a definite outline of attitudes, knowledges, skills, and habits in reading and study to be developed grade by grade. The course suggested is the result of a coöperative attempt to set up tentative objectives. It resembles the *Rochester Chart of Reading Attainments* but has some special features of its own. The activities outlined should be developed in

the reading instruction and applied in subject situations; unless all teachers participate in the plan it must fail. A further discussion of the details of this course will be given in Chapters XIII–XV.

SUGGESTIVE PROBLEMS

1. What is the effect of presenting a definite outline of specific acts for developing reading and study habits?
2. Contrast such an outline with general suggestions for improving study.
3. Discuss the development of good attitudes in study as suggested in this outline.
4. Suggest what attitudes, knowledges, skills, and habits seem to you to be particularly important.
5. What is the difference between an attitude in study and a habit?
6. In what way are habits and skills identical?
7. Show how a person may have a skill without habitually using the skill in study?
8. Discuss how this course of study might be introduced in a school.

SUPPLEMENTARY READING

1. HALL-QUEST, A. L. — *Supervised Study in the Elementary Schools*, Chapter VI. Macmillan, 1924.
2. O'HERN, J. P. — "The Development of a Chart for Attainment in Reading." *Journal of Educational Research*, Vol. III, pp. 180–94.
3. STORMZAND, M. J. — *Progressive Methods of Teaching*, Chapter IX. Houghton.

CHAPTER XIII

Reading and Study in Grade One

Necessity for beginning training early. — The necessity for beginning to train children to study as soon as they begin to learn to read has only recently begun to become generally apparent, although McMurry stated in *How to Study* that training the child to study really begins, or should begin, in the kindergarten and first grade. While he did not suggest that children be made conscious of the problem of study, he said:[1]

> Method of study will then become a large subject for regular instruction. Even in the kindergarten and first year of school it will receive some attention, for that is the time when children begin to acquire good mental habits, or fall into pernicious ones. Without making so young pupils fully conscious that they are learning to study, the teacher will lead them to move their eyes rapidly over the printed page, so as to read simple stories quickly in silence, and with good expression orally. This is already done by good teachers. She will accustom them to responsibility for discovering the bearings of observations in nature study, of stories, work in color, etc., on their home lives, and thus pave the way for collecting knowledge under guidance of definite aims. She will cultivate in them the power to fill out the author's picture, until situations are more vividly seen and felt than now. She will require them to think and talk more sharply by points, and to use judgment in neglecting really unimportant details, training their consciences to allow such neglect, if such training is needed. She will encourage them to pass judgment on the merits of facts that

[1] pp. 297–98.

they learn, while influencing them not to feel too sure. She will see that they do whatever thinking is to be done on poems and other matter that is to be memorized before the memorizing itself is undertaken, so that the important habit of memorizing through thought, rather than without it, shall begin to be firmly fixed. She will lead them to understand that they are not through with the study of topics until the ideas have been used in some way, perhaps many times. And, particularly, she will put forth effort to keep them natural in whatever they do and say, reasonably contented with their abilities, and self-reliant. While most of such instruction will be incidental, a portion of many a recitation will be directly occupied in this way.

The course of study in the preceding chapter has emphasized certain definite attitudes, knowledges, and skills which should be developed into habits of feeling, thinking, and acting efficiently in study situations. Certain of these are assigned to the first grade with the belief that they should be presented there in order that the child may have his attitudes toward study and work with books affected in the right direction. The child gets many of his fundamental attitudes before the age of eight or ten. If he is to feel that study is worth while and is to admire those who study, he must be influenced to do this as early as possible. All that is suggested is possible of attainment and in no way conflicts with the nature of child development.

Changed emphasis upon training in reading. — A recent report[1] of the Committee on Reading of the National Society for the Study of Education reflects the changed emphasis upon teaching primary children. The committee describes the first-grade period as a time of rapid formation of certain fundamental atti-

[1] *Twenty-fourth Yearbook*, Part I. Public School Publishing Co., 1925.

tudes, skills, and habits. Skills in reading and the use of books are recommended for emphasis and a very careful method of introducing the child to the book is outlined. This method is recommended because it is recognized that first impressions are most important. The child must be impressed with the idea that reading is a thought-getting process. He must therefore succeed in actually reading thoughtfully as soon as possible. Early black board work, lessons based upon experience, delayed introduction of phonic analysis, and careful attention to the nature of the vocabulary introduced, help to produce this effect. The course of study in Chapter XII is in general accord with the point of view of this committee. In the present chapter, this proposed program is discussed in full as it affects the first grade.

Securing right attitudes important in first grade. — The first year or two of the child's school life, as pointed out in Chapter XII, is particularly crucial in the formation of attitudes, either favorable or unfavorable, toward the school, the teacher, and the school activities. Great care must be taken at this time to secure the proper mental set toward the activities of the school in order that the child may, if he has the capacity, form a liking for books and study, as well as for games, manual occupations, and other recreatory and socializing activities.

The primary teacher has a particularly important place in the formation of right attitudes toward the school. The child gets his first impression of the school from his parents or playmates. Often he is burning

with a desire to attend. Sometimes he fears school and must be taken there by force. If his attitudes are favorable, the teacher may encourage them; if unfavorable, the cause for the child's dislike may be discovered and removed.

The elements that may cause unfavorable attitudes are (1) the teacher, her personality and her attitude toward her work; (2) the schoolroom, its degree of attractiveness, its comfort, and suitability; and (3) the activities of the school, both work and recreatory. If the teacher is a loud, coarse, rough, and slangy individual, if she dislikes children and works merely for her pay, if she does not care for books or for other things that go with study and learning, she can permanently injure the attitudes of her pupils with regard to these things. If, on the other hand, she is low-voiced and pleasant, gentle, correct and skillful in speech, loves children, understands them, and is happy with them, regards her salary as an incidental matter, and loves books and the things that go with them, she can infect her pupils, by her own attitudes, with a love and desire for the school and its activities. In addition, the schoolroom itself must be attractive, pleasant, and comfortable. Good light, simple decorations, pictures, flowers, and other objects of beauty, will dispose the child to love the place in which he works. The seats must be suitable for him, and he must be comfortable in order to do good work. And, finally, the activities he is asked to perform must be suitable for him and must be selected in such a manner that they lead to desirable ends. Work activities must be within the

range of his understanding, interests, and capacities. He must not be asked to do things that he has no power to do. Recreatory activities must be plentiful and suitable, but not antagonistic to the fundamental purpose of the school; that is to say, they must contribute to the fundamental progressive development of the attitudes of willingness to work, desire to help others, love of the school and its activities, sense of responsibility, perseverance, and pride in achievement. There must be a balance between the activities that are purely recreatory and the activities that are of the work type. If play and work activities can be made identical and if play gradually merges into work, so much the better. But the teacher must not contrast the desirability of play and the nondesirability of work, either by word or by action, for either will affect immeasurably the attitudes of the child.

The method of securing favorable attitudes in the first grade is seen, then, to be largely indirect, rather than direct. An enumeration of teachers' activities and of some children's activities may be helpful and is here given in approximately the same form as in Chapter XII, but the meaning of each suggestion is developed by explanation and illustration.

1. *Select the activities of the school carefully.* If the school activities appeal to the child's natural tendencies to action, he at once assumes the attitude of willingness to work. Silent-reading exercises which appeal to the instinct for self-activity, manipulation, rivalry, and desire for approval are favorable to work. Reading exercises too difficult for the child, overemphasis upon

phonetics, too long periods of drill on word pronunciation, too advanced forms of number work, undue requirements in writing, and the like, make the child nervous and unhappy, and dispose him to dislike the work of the school. On the other hand, the use of games, the frequent appeals to activity involved in action and direction, matching, drawing, dramatization, etc., dispose the child to love school work.

Play activities which have little relation to work should not be emphasized to the detriment of work exercises. Recreatory reading should not usurp all the time of the reading period. Games should be related directly to school skills whenever possible. Certain language games have value both as play and as work. That reading exercises may often be both play and work is shown in the following silent-reading exercises which are similar to seatwork and blackboard exercises now used in many schools.

Draw a tree.
Put some branches on the tree.
Put some leaves on the branches.
Color the leaves green.
Color the branches brown.

Here are four balls.
Color the first ball red.
Color the second ball green.
Color the third ball blue.
Color the last ball brown.

From such exercises the child gets valuable information, practice in reading, and enjoyment in the activity because he likes to draw and color.

2. *Make it possible for the child to succeed.* The careless teacher, through lack of attention to the individual child, and through inability to gauge the task to the child's abilities, sometimes makes it impossible for him to succeed. According to a well-known psychological law, failure to succeed leads to dissatisfaction in the task and a natural turning away from it. Giving the child reading material that is too hard for him, giving insufficient drill on word-recognition, failing to perfect the memorization of number combinations as they are prescribed, and the selection of too difficult seatwork activities may lead the most favorably disposed child to dissatisfaction with the school and unwillingness to perform his tasks. An example of such a situation would be the following:

John has been ill for a month. He returns to the school having missed some very essential drill. The teacher fails to give John the necessary attention and he is unable to perform the required combinations in arithmetic, to read the exercises in the reading lesson, and to form certain characters in writing. John persists for a while, but his work is unsatisfying to him and of an inferior quality. The teacher has failed to make possible success in his tasks. His pleasure in his work is lessened and his attitude toward it is less favorable than it was.

John may later make up the deficiency if he is intelligent, but he may continue to fail and get the habit of failing. In the middle and upper grades, he may become an habitual and calloused failure. His condition is due to the fact that at a crucial time in his develop-

ment his teacher failed to make success possible of attainment. Such a condition could in many cases, at least, be avoided.

The prevention of failure in early stages of learning to read is now being accomplished in many schools by using pre-primer material for the early instruction in reading. *The Easy Book*,[1] by Jean Y. Ayer, is an example of a book designed to furnish material of this sort for beginning reading. This material is based upon familiar experiences and should present a minimum of difficulty to children.

Lessons based upon the child's experiences are also used by teachers as an introduction to the printed page. The following lesson was worked out by one of the writer's students, first on the blackboard as a language-reading exercise. Later it was transferred to a home-made chart, by the use of an ordinary rubber-stamp printing outfit.

Yesterday there was a parade.
Our class went to see it.
We saw soldiers marching.
The band played.
A soldier carried a flag.
We waved when the flag went by.

Each child helped to make the chart and therefore had a personal interest in it. Children who are introduced to reading a book by such preliminary reading experiences are not likely to lack an interest in reading. The reading has meaning. Interest in it helps to make the mastery of the words easy and prevents mechanical word-calling.

[1] Macmillan, 1926.

In general, successful progress in the early stages of learning to read demands the use of much familiar and easy material. More "Easy Books" are needed, and teachers should not hesitate to take sufficient time in this stage of the process to build a sufficient sight vocabulary before launching the child upon the reading of difficult primers and first readers. By such care discouraging failure will be prevented.

3. *Utilize the child's natural desire to do something for others.* Work of any kind must have in it some of the elements of unselfish service. Children have a natural pleasure in doing things for others if they are encouraged to do so. Let the child have an opportunity to do things for his teacher and for his classmates. When he reads aloud, let him read so that others may hear, and read well enough so that they take pleasure in his reading. Encourage him to care for the plants, help the teacher keep the classroom in order, and do things for other children when they really need assistance. Praise him judiciously for such work. While this is not directly related to study at present, it prepares for coöperative study and other kinds of work later. Selfish children are disposed to challenge too much the type of work that has in it anything but individual satisfaction.

4. *Utilize indirect influences to cause the child to like books and study.* If one set of ideals, let us say it is to be a good baseball player, is held up for the admiration of children for any length of time, the natural result is that a large number of them are favorable to becoming ball players. If ideals of military leadership, states-

manship, commercial greatness, or other attainments, are furnished them constantly, a large percentage will take a special interest in one or more of these activities. In the lives of such men as Washington, Franklin, Lincoln, Roosevelt, and others, are incidents which tell about their work with books and study. Numerous stories emphasize also the studious child, but often in an unfavorable light. It is suggested that such incidents as Lincoln's work at night by the fireside with his book and charcoal, Washington's industry in study, and incidents in the lives of other men, be emphasized as opportunity arises. For example, George Washington and the cherry tree incident may give way to something like this:

"As this is Washington's Birthday," the teacher will, perhaps, begin, "I shall read [or tell] you a story about Washington."

As she reaches the portion which deals with Washington's schooling, emphasis can be placed upon Washington as a student. Questions such as the following lead naturally to a proper emphasis upon books and the use of books.

Did George study hard?
What did he learn at school?
What do you think he studied?
What books did he study?

In a similar manner, Lincoln's love of books may be noted — his work at night by the light of the fire. These incidents are commonly slighted in favor of the political and military features of a great man's life, yet they offer opportunities for the development of favorable attitudes toward books.

5. *Praise judiciously the work of the child.* Children respond to praise as the sunflower does to sunlight. Unwise, injudicious praise is, of course, bad; but praise of the right things encourages them. Instead of saying in the presence of children or parents, "Mary is a nice child; she never causes me any trouble," why not say occasionally, when conditions warrant, "Mary is a good worker. She always stays at her work until it is done." Or, "Mary is good at reading. She can tell what the story says after she reads it, and she doesn't make mistakes."

Praise good reading, good handwork, good number work. Show by your own attitude that these are among the most valuable things the child can do. Do not, however, praise one child to the disparagement of another. Instead of saying, "John is better in reading than Harry," say, "John's reading is improving. He makes fewer mistakes than he did."

6. *Allow children to show their proficiency in work.* In school programs, give a proper emphasis to school work. Do not have on parents' day a mere program of recitations, but show them how the children can read, write, and do their occupation work. Emphasize the work of the school as well as the recreatory activities. The children will note the difference, and they will accept your evaluation of these things to a large extent. A school program, assembly exercise, or parents' day, may well have the following features:

a. Flash-card lesson in silent reading.
b. Writing at the blackboard.

c. A language exercise — telling about some interesting facts children have learned.
d. Play and recreation exercises.
e. Story-telling and dramatics.
f. Oral reading from familiar material.

The parents will gain in appreciation of the school work, and the children will get the proper perspective.

7. *Do not put work activities in an unfavorable light.* While it is possible that work exercises and play exercises may be almost identical with skilled primary teachers, if work exercises are to be successful, they must not be presented in an unfavorable light. Such a statement as, "Do your work well and then I'll let you play a game" puts work in an unfavorable light. Do not let the child feel that you regard work only as a necessary evil.

8. *When a child is asked to perform a task see that he completes it.* Children should learn to be responsible when they are asked to do things. If the teacher assigns work which she does not require to be finished, the child is injured, because he learns that she does not always mean what she says. Handwork should be completed; tasks about the schoolroom should be performed. Insistance upon these matters will tend to develop the habit of being responsible and of finishing work. Children should form favorable attitudes toward the necessity of persisting in work and of being responsible. Pride in doing things that are started can be encouraged by praise for those who do persist and who show a sense of responsibility, and by insistence upon such habits with those who do not.

Knowledges about study and books. — Knowledges about study and books may not result directly in good study habits, but they have a powerful influence in that direction. Knowledge needs to be translated into habitual activity. The suggestions for developing such knowledges in primary grades are simple, but fruitful of results.

1. *Talk to children about books.* Little talks about books, what they are for, how useful they are, and how they differ in their content, should be given some time during the year. The books which give facts as well as those which tell stories should be suggested. The bibliography outlined in Chapter VII of the *Twenty-fourth Yearbook*, is suggested for the use of the teacher. There are few books for primary children at present which give real facts about the world in an interesting way. The teacher will have to read from factual books to children. Several books are suggested by the committee on reading as among the best that are available for very young pupils.

1. Adelborg, Ottilia. *Clean Peter and the Children of Grubbylea.* Longmans, Green and Co., New York, 1901.

2. Bailey, Carolyn. *In and Out-of-Door Play Games* and *All the Year Play Games.* Albert Whitman Co., Chicago.

3. Falls, C. B. *A B C Book.* Doubleday, Page & Co., New York, 1923.

4. *Field and Farm.* Samuel Gabriel Sons & Co., New York, 1920.

5. Hall, Jennie. *Weavers and Other Workers.* Educational Publishing Co., Chicago.

6. Jewett, Martha. *Hopi, the Cliff Dweller.* Educational Publishing Co., Chicago.

7. Miriam, Ida C. *Knowledge Primer Games.* Albert Whitman & Co., Chicago.
8. *My Book of Cats and Dogs.* Samuel Gabriel Sons & Co., New York.

Factual books give the child an appreciation of informational material. They may be as interesting as the traditional primer, or more so, if properly written. For children a little older, *Ned and Nan in Holland*,[1] and the other books in this series, have been known to awaken a desire to read in a child who previously had no such desire.

One book talk might start in this way:

> Children, here are two books. This one is a story book. You have read it. Its name is ——— ———. What did it tell about? Here is another book which I am going to read to you. This book is named ———. It is different from the other book. It is not a story book. It tells facts about something.

After having read from the factual book to the children, the teacher may ask such questions as "How is this book different from the other?" "Do you like it?" "What can you remember about it?"

2. *Show children how questions are answered by books.* Children ask innumerable questions. Give them early demonstration of the use of books in answering their questions. Comment upon how fine it is to have a book which will answer one's questions and suggest that when they learn to read well they may consult such interesting books. The teacher may introduce a lesson on this subject in the following way:

[1] Olmstead, E. G., and Grant, E. B. Row, 1926.

Children, you have often asked me questions about things. Someone asked me to-day how the robin gets its food for the little birds. Now, I am going to show you that you can find an answer to this question in a book. Here is a book about birds. See the pictures. It tells a great many things about birds, but I want to know about the robin, so I am going to look up "robin" in this book [turning to index]. Now I find this about the robin [reading from book and explaining]. When the reading is finished, the teacher then asks questions, as, "Have you ever seen this kind of book before?" "Do you think it would be interesting to read it?" "Have you any other questions you would like to have answered from this book?"

3. *Explain how some people get their living through the use of books.* Tell how the teacher, the lawyer, the minister and other people do much of their work with books. Suggest that some of the children may sometime be workers with books. Explain how the librarian at the library does nothing else but work with books and comment on what a pleasant life it must be. A lesson may be given on people who use books.

The teacher may make such comments and ask such questions as the following:

How would you like to work with books all the time? There are people who get their living by working with books. How many know the librarian at the public library? How many know Mr. ———, the minister at the ——— church? Do you know what they do every day? Miss ——— takes care of the books at the library. She loans them to your fathers and mothers and to you. Mr. ———, the preacher, studies a great many books so he will have a great deal to tell when he speaks on Sunday. How would you like to earn your living by using books?

This, or some similar discourse, can be used to interest children in books and people who use them. It is, of course, only an incidental means of developing an interest in books.

4. *Have children read books with a simple problem in mind.* After children have become able to read simple primers, they should be introduced to the reading of some stories with certain definite problems in mind, and should know that books will help them to answer their questions. The teacher may use some such method as the following:

Some time ago, I showed you how I could answer your questions by reading in a book. Now, I want you to answer some questions by reading for me. We shall read the story of *The Little Red Hen* which you have read before, but I shall ask you some questions before you read. These are the questions:

1. What did the little red hen have in her house?
2. What did the fox's mother say to him about the little red hen?
3. What did the little red hen do when the fox tried to catch her?

By the use of these and similar questions, the teacher can make the point that when the child has questions in his mind about the story he can find the answers in the text. The child should locate the answers to the questions and show the teacher that he has found them. As soon, however, as the child has enough vocabulary so that he can read common words easily, he may be introduced to simple informational material, rather than to story material, to answer his fact questions. The teacher may begin the lesson by discussing the subject of the material and having the children ask questions about it. Some of the newer first readers have introduced such lessons and have, in manuals, given simple directions for their use. An illustration of such a lesson may help the teacher who has no such material to prepare an exercise in hectographed or mimeographed form.

The teacher introduces a lesson on *The Grocery Store* by some such remarks as these:

How many of you boys and girls know what is found in a grocery store? Do you ever go to the store for your mother? There is a lesson in our book about the grocery store.

Develop with the children some simple questions, such as,

What can we get at the grocery store?
Can we get meat at a grocery store?
Can we get shoes?
Can we get ice cream?

Now let the children read the material to locate the answers to their problems. When they have located the answers, the teacher should check to see if they have them correct.

The Grocery Store

The grocery store is the place to buy food.
We can buy bread at the grocery store.
We can buy potatoes and other vegetables.
We can not buy clothing there.
We can not buy ice cream there.
We can not buy shoes at the grocery store.
Sometimes we can buy meat there.
We can buy milk at some grocery stores.
Most of the things we eat can be bought at the grocery store.
Mr. ———— is our grocer.

It is, of course, understood that the vocabulary must not be too difficult and that such exercises must not include an excessive number of new words. Most of the questions about the grocery store could be answered by the pupils without reference to the text. After a little, let them look in simple factual writing for answers

to questions that they could not answer without this aid.

Study skills to be developed. — An attempt is made in this section to enumerate the most important skills which may be regarded as appropriate to this grade and to suggest activities for their development. It is important that the teacher of the first grade realize that thoughtful, intelligent reading of the work type begins in the first grade and not some years later. Those skills which particularly affect the work-reading habits of children are, therefore, treated here.

1. *Emphasize reading for meaning in all reading.* Aside from the use of certain oral drills for pronunciation or articulation, there is little excuse for not emphasizing meaning in all reading. The attitude of the teacher soon gives the child his cue. If she introduces the child to the reading act as a thought-getting process, as suggested by Parker in *Types of Elementary Teaching and Learning*,[1] Chapter V, she puts reading in its proper place. She emphasizes from the very first that reading is for the purpose of interpreting thought. She uses for the beginning lessons sight words requiring action and direction, or she builds up the meaning of reading exercises orally before she presents the exercise. The first sentence reading is marked by meaningful content. It is not merely a word-pronunciation exercise, but a lesson in interpretation. Such an approach to reading is often made by using such a list of action words and simple action sentences as the following. (The child shows understanding by action.)

[1] *Op. cit.*

Hop.	Run to me.
Skip.	Stand up.
Jump.	Sit down.
Run.	Jump.
Stand.	Run to the door.
Sit.	Stand by the window.

Contrast such an exercise with a first page from an older primer.

I see a dog.
This is Harry.
I see Harry.
Harry has a dog.
This is a dog.
Harry can run.

In the first exercise, thoughtful reading for meaning is easily provided for, while in the other it is difficult.

Skill in understanding meaning is gained by the use of exercises involving action, direction, matching, completion, and the like. It may also be provided for by introducing the first primer story, as suggested by Parker,[1] by means of blackboard lessons, chart, or other devices, and then letting the child read the book as a continuous reading exercise rather than as an exercise in word pronunciation. Exercises which require the child to answer questions, perform an action, make something, draw, match objects with words, or in some other manner respond concretely to the reading stimulus, are to be preferred, however, as preparation.

2. *Give simple drills in reproducing the thought of stories.* Reproducing a story freely is an excellent exercise in language. It prepares the child also to reproduce history stories and other narrative material

[1] *Op. cit.*, pp. 72–124.

later. Reproduction of factual paragraphs, rather than paragraphs of purely fanciful material would seem, however, to give more direct training for future study exercises. Such simple factual lessons are now becoming more common in primary grades and seem destined to increase in number.

For first year pupils, a lesson on some phase of community life, such as a visit to a farm, may be followed by an exercise such as follows:

1. Where is the farm?
2. What animals did you see on the farm?
3. What does the farmer do in the spring?
4. What does he do in the summer?
5. What does he do in the autumn?

A paragraph of statements concerning the farm may then be placed on the blackboard and the children be asked to reproduce parts or all of the paragraph.

Exclusive reproduction of stories should probably give way to a certain extent to reproduction of factual paragraphs on such common subjects as how to open a book, how to answer the telephone, how to hang out the flag, etc.

Exercises in reproduction should emphasize connected reproduction rather than disconnected statements. The exercise may start with a statement by each child, and end with a complete reproduction of the paragraph by as many children as possible.

3. *Drills in dramatization.* The dramatization exercise, as ordinarily found, is too well known to require much comment. It has little use in the reading type of study, but is indirectly related to it in that it involves,

to a certain extent, the following of directions. Dramatizing such lessons as are factual in nature, for instance, "How to Open a Book," "The Use of Fire," "How to Care for a Dog" and the like, may be useful, because they require the child to read the material carefully, and he is certain to understand the process better if he has to show others how to do it. The dramatization thus motivates the reading and makes it more accurate. In a like manner, if children are asked to read stories in order to dramatize them, they have a good motive for mastery of the story and accuracy in reading.

4. *Following directions.* Drill in following written or printed directions is characteristic of the recent silent-reading program in the primary grades. Miss Watkins,[1] a pioneer in this field, has splendidly outlined work of this character. It is suggested also in many of the other recent books on teaching reading.

The following of directions is a prime requirement in many types of study. Accurate reading of directions is essential in arithmetic, science, language, and other later work. The directions are at first very simple; such as, "Run to the door," "Stand up," etc. Later they become more complex and may consist of an exercise in a reading book or a mimeographed exercise. The following is an exercise made by one of the writer's students. It may be performed by children in the latter part of the first year, but is rather advanced for many even then. It is given to show what

[1] Watkins, Emma. *How to Teach Silent Reading to Beginners.* Lippincott, 1922.

may be accomplished when children are trained in this type of exercise. When given, it was accompanied by simple, colored illustrations.

We are Jack and Joe and Tim and Ted.
Jack wears a blue waist.
Joe wears a black hat.
Tim has a pail.
Ted has a balloon.

Draw two lines under Tim.
Make a cross above Ted's hand.
Put a ring around Joe.
Make a cross on Jack's leg.
Draw a line over the balloon.
Make a cross on the pail.

Molly and May have three visitors.
One is Katie, one is Peggy, and one is Betty.

Katie has a yellow sunbonnet.
Peggy has a green sunbonnet.
Betty has a red dress and a red sunbonnet.
Molly wears her pink sunbonnet and her blue dress.
May has on her blue sunbonnet and her yellow dress.

Draw a line under Katie.
Draw two lines under Peggy.
Draw three lines above Betty.
Make a cross over May.
Make a cross under Molly.
Draw a little ring on May's sunbonnet.
Draw two little squares above Katie.
Put two lines over Molly.
Draw a ring around each visitor.

Ability to follow directions will demand accurate reading. Such exercises are very interesting to children

probably because of the puzzle element. Other exercises which have in them the same element are those requiring matching, construction, free drawing, etc.

5. *Give speed drills.* Speed in reading as a factor in study was discussed in another chapter. Some recent developments in flash cards have been very suggestive. Seatwork exercises of a great variety of types are now available. Excellent material is published by most book companies for this purpose. Speed exercises to be of value should, of course, employ easy material and should follow, rather than precede, emphasis upon comprehension. Care taken in this grade to develop good eye movements and eliminate lip movement will result in much saving of time in study later.

Speed drills of one kind or another are widely used as a means of developing good reading habits. At first the child in the primary grades must be concerned chiefly with accurate recognition of sentences, phrases, and words. The element of speed should not then receive the major emphasis, but as soon as the child has accumulated a vocabulary of familiar words and has had some practice in reading, the element of time may be considered. Speed drills may utilize the various types of action, direction, matching, completion, drawing, and construction exercises. For example,

Action Sentences

Direction to Children: See how quickly you can do what these sentences tell you. Read them quickly, but be sure to get them right.

1. Run to the door and tap two times.
2. Find page 15 in your reader.

3. Show Miss ———— how the bird flies.
4. Find the story you like best in your reader.

Completion Exercise (On flash cards or on blackboard)

Direction. Give the words which should be used in the blank spaces below. Read as quickly as you can, but be sure you get them right.

1. The dog is a good ——.
2. He watches the —— at night.
3. Children should be —— to dogs.
4. The dog likes to eat ——.
5. He must have clean, fresh ——.
6. He likes to run and ——.
7. The dog should have a —— when he gets dirty.

If this material is familiar to the children the exercise may be done quickly and the element of rapid recognition may be emphasized.

6. *Give lessons in reading a story rapidly.* Lessons in rapidly reading to find answers to questions form a basis for that familiarity with books and that rapidity in using them which will be invaluable in study in the middle and upper grades, as well as later. The questions should be formulated so that they are of two types — (*a*) fact questions and (*b*) relational, or interpretative, questions:

1. What did Johnnie say to the old man?
2. What do you think was the reason the old man didn't answer?

This type of reading should be done with familiar material. It is valuable because it gives much practice in running the eye over the printed line in search of information and it aids in rapid formation of mature reading habits.

7. *Teach children how to handle books properly.* At this time, the opportunity is excellent for the establishment of proper respect for books and proper physical care of them. The book is interesting in and of itself. Teachers may point out the beauty of the book, explain how to open it, how to find the author's name, and how to find a given page. Later the table of contents may be noted, its use indicated, and some practice given in finding a desired selection quickly. This is, of course, another step in introducing the child to reading and study. Such early training will help, too, to develop good habits in using books.

The teacher may develop a lesson on the blackboard after having discussed the opening of the book with the children and after having had the process demonstrated. Such a lesson may be used later for rapid reading of various kinds.

How to Open a Book

Lay the book on your desk.
Take hold of the leaves with one hand.
Now press down the front cover.
Press down the back cover.
With one hand hold the leaves.
With the other press down the leaves.
First press down the front leaves.
Then press down the back leaves.
Do this until the book lies flat with its face up.

8. *Give lessons in reproducing from observation.* The importance of training a child to observe accurately has been emphasized as a factor in reading and study. It has more connection with the latter than the former; but the child needs to learn to relate what he reads

to what he sees. Such exercises also help to sharpen observation and to train the child in desirable language habits. In most schools success in developing language ability is necessary to success in reading and study. Reading can not be comprehended without a rich background of experiences with the world around the child, and these experiences must be discussed to be of value in study.

Let us assume that the children have had a visit to the grocery store in connection with their study of community life. An excellent lesson in language can follow, if the teacher will use such questions as are suggested.

1. What things did you see in the grocery store?
2. What is a scale?
3. What does the grocer do with the scale?
4. What things can you buy at a grocery store?
5. How does the grocer send the things to your mother?
6. Can you buy a dress at the grocery?
7. Can you buy potatoes, peas, cake, soap, sugar?
8. How do you get things at a grocery store? Does the grocer give them to you?

Some children may then be asked to give a connected account of the trip to the grocery. Finally, the teacher may ask the children to make a series of statements about the grocery store. These may be written on the blackboard or made into a chart and constitute a future reading lesson. A typical sentence group follows:

Our Trip to a Grocery Store

Yesterday we went to the grocery store.
It is on ——— street.

Mr. ——— is the grocer.
You can buy many things at the grocery.
You can not buy clothes there.
You can buy food.
The grocer sends things home in a car.
Mother pays money for the things.

This type of lesson helps train the child to observe the things about him, enriches his vocabulary, and utilizes an ordinary experience about which he feels like talking and reading. Of course, many other kinds of experience are also usable in such lessons.

9. *Mechanics of reading.* Little has been said about the development of ability to recognize words and to become independent in word recognition. It is to be understood by the reader that what has been written about skills in reading refers mainly to those skills which are particularly necessary in reading of the work type. The mechanical phases of reading are generally so well known that it seems unnecessary to reproduce them here. The teacher will follow her manual on the teaching of reading, emphasizing particularly the skills suggested in the foregoing discussion.

For a brief account of the most important problems in teaching beginning reading, the reader is referred to Parker's *Types of Elementary Teaching and Learning*, Chapter IV, and to his pamphlet on *How to Teach Beginning Reading*. A bibliography of books treating primary reading is given here for the convenience of the reader.

1. Jenkins, Frances, *Reading in the Primary Grades*. Houghton, 1915. An excellent discussion of the development of thoughtful reading.

2. Watkins, Emma, *How to Teach Silent Reading to Beginners.* Lippincott, 1922. A very stimulating book for teachers of primary reading.

3. Parker, S. C., *Types of Elementary Teaching and Learning.* Ginn, 1923. Contains three excellent chapters on reading. Chapter V — Beginning Reading. Chapter VI — Scientific Investigations of Reading. Chapter XI — Skillful Silent Reading.

4. Pennell, M. E., and Cusack, A. M., *How to Teach Reading.* Houghton, 1924. Especially good on the objectives in reading for the different grades.

5. Germane, C. E., and Germane, C. G., *Silent Reading.* Row, 1922. A very readable and suggestive book on developing ability to read silently among children of the first eight grades.

6. Stone, C. R., *Silent and Oral Reading.* Houghton, 1922. A helpful discussion of the development of reading ability, both oral and silent.

7. Wheat, H. G., *The Teaching of Reading.* Ginn, 1923. Contains especially suggestive chapters on "Recognition" and "Mechanics and Meaning."

8. Anderson, C. J., and Davidson, I., *Reading Objectives.* Laurel Book, 1925. A book rich in suggestions on both types of reading.

9. Gates, Arthur I., *The Improvement of Reading.* Macmillan, 1927. Methods of conducting instruction, measuring achievement, and diagnosing difficulties.

Habits to be formed. — The habits to be formed in reading and study in this grade are a logical outgrowth of the foregoing discussion of attitudes, knowledges, and skills. Until attitudes, knowledges, and skills become habits of action, little progress in the use of books in study can be made. The outstanding habits desired at the end of this year are outlined in some detail in the course of study. Comments upon the importance of these habits at the end of this grade may be helpful.

1. *Habit of liking to read.* If the child has been in-

troduced to reading as a thought-getting process, has been encouraged to read, and has been given proper training in word recognition, he should have formed the habit of liking to read. Practice in reading should have made it a pleasure instead of a burden. If care has been taken to remove mechanical difficulties, or better still, prevent them, such a habit should have been formed.

2. *Habit of reading rapidly and accurately.* The habit of reading quickly and accurately naturally grows out of training in reading skills. A proper program of reading, including exercises in speed and comprehension, should have accomplished this result with the majority of children by the end of grade one, as far as first-grade reading material is concerned, provided there are no physical defects and that the children are of normal mental ability. The failure to form the habit indicates lack of mental ability or weakness in the plan of instruction.

3. *Habit of following simple directions accurately.* The formation of the habit of following simple directions accurately should be indicated by the correctness with which children do seat exercises involving directions and by the readiness with which they can carry out simple directions written on the blackboard by the teacher. Skill in this ability must be habitual in later study.

4. *Establishment of good eye movements, decrease in lip movement, wide span of recognition, and good vocabulary.* These mechanical matters are quite easily checked. Perfection is not to be expected, of course.

But great progress should be shown. Children should be free from finger pointing and excessive lip movement. They should be able to read with rapidity in silent-reading work and smoothly when reading orally. The vocabulary can be checked by means of a pronunciation test, such as that of Gates,[1] or by the Pressey-Skeel vocabulary test.[2] A standardized test such as the Haggerty Sigma I[3] given at the end of this year will reveal the presence or absence of most of these habits.

5. *Consulting books for information as well as for pleasure.* Children should show some appreciation of informational books by the end of the year. If informational books are available they should be consulted by the children. If the teacher has to answer their questions from informational books read by herself, they should show a disposition to consult her frequently.

6. *Ability to concentrate for short periods.* At the end of the first year, the child should be able to concentrate easily on a definite task for short periods. If he has failed to form this habit, he is lacking the first essential to study. He should do a piece of construction work, read a story, do an exercise in coloring, or the like, without being urged to keep on working.

7. *Promptness in beginning and industry.* Children at the end of the year should begin a set task without the necessity for frequent urging, excessive questioning,

[1] *Gates Word Pronunciation Tests.* Teachers College, Columbia University.
[2] *Pressey-Skeel Vocabulary Test.* Indiana University, Bloomington, Indiana.
[3] *Haggerty Reading Examination,* Sigma I. World Book Co., Yonkers-on-Hudson, N. Y.

and other distractions. They should persevere until the task is finished, if it has been wisely selected. Since these habits are essential in study, the teacher cannot start too early to secure the right type of reaction. The law of habit formation dictates that the child begin the formation of a habit by carefully performing an act as directed and continue to practice in the same form as it was begun, allowing no exception to occur. The more frequently an act is performed inaccurately, the harder it will be to perform it accurately later.

8. *Habits of neatness and accuracy in use of books.* By the end of the first year, the child should hold a book properly, open it correctly, and turn to a given page readily. He should habitually refrain from marking books and turning down corners of pages. If properly taught, he can find the title of a given story or factual article in the table of contents.

9. *Habit of being interested in world around him and of observing accurately.* The habit of interested observation is desirable if the child is to later make reading and study mean enrichment of his own life. Much that is written will be meaningless to him unless he has the habit of accurate observation.

The foregoing discussion of attitudes, knowledges, skills, and habits in reading and study is meant to be suggestive rather than complete. It outlines a program, however, that will result in a rapid development of ability to read, study, and think. The teacher can use the outline as a suggestive guide.

Diagnostic and remedial instruction. — The teacher should constantly be on her guard to see that her program does not fail to accomplish results. Occasionally she should check up on the progress of the class in the formation of the various attitudes, knowledges, skills, and habits. When children are failing to develop the desired abilities, as some will, she should attempt to get at the causes. In this connection she may well use the diagnostic chart suggested in Chapter XVI and check up on progress. However, if the program in reading is well organized along modern lines, there will be less failure than formerly. The price of success here, nevertheless, is eternal vigilance. If the children have been classified as to reading ability, or readiness or nonreadiness for reading, as suggested by the Committee on Reading of the National Society for the Study of Education,[1] there will be far less need for remedial work than in the case of pupils who are higher up in the grades. The chief endeavor of the teacher of this grade should be to avoid the necessity for remedial work by careful planning, diagnosis of the needs of the children, and proper teaching when the material is first presented. Skilled teaching avoids much reteaching.

Materials to be used. — For the purpose of developing work, reading, or study habits, the teacher may well consult the chapter on materials of reading suggested in the *Twenty-fourth Yearbook*, Part I, of the National Society for the Study of Education, Chapter VII. The bibliography included has been carefully

[1] *Twenty-fourth Yearbook*, Part I, Chapter III.

made in an experimental school and presents material of a highly useful sort.

To the teacher seeking real-life subjects, it should be added that there are several of the newer primers and first readers which deal with these. Among such books are these.

1. Ayer. — *The Easy Book.* Macmillan.
2. Buswell and Wheeler. — *The Silent Reading Hour,* Book I. Wheeler.
3. Coleman, Uhl and Hosic. — *The Pathway to Reading.* Silver.
4. Field and Martin. — *The Field-Martin Primer.* Ginn.
5. Hardy. — *The Child's Own Way Series.* Wheeler.
6. Horn, Cutright, and Horn. — *First Lessons in Learning to Study.* Ginn.
7. Neal and Storm. — *The Open Door Primer.* Macmillan.
8. Neal and Storm. — *The Open Door First Reader.* Macmillan.

There are doubtless other books of somewhat similar content with which the writer is unfamiliar. It is advantageous to use such books for at least part of the work of the first year. With such material as is contained in books of the type cited above, the teacher may develop the beginnings of an interest in informational reading. In the following chapter a list of books of informational content but of more continuous character is given.

SUMMARY OF THE CHAPTER

In this chapter, the plan for teaching reading and study suggested in Chapter XII has been discussed in some detail. The necessity for beginning the formation of definite habits in the first grade was developed.

The validity of this procedure receives support from the recommendations of the Committee on Reading of the National Society for the Study of Education. Securing right attitudes, knowledges, and skills is brought about by direct attention to these factors by the teacher. She must give proper attention to study, work, and reading attitudes. Reading skills must be developed through a modern program of reading instruction such as is outlined in many recent books on reading. Certain habits which function in study, in simple form, should have been formed by the end of the first-grade course. The presence or absence of these habits is a test of the success of the plan. Excessive reteaching should be avoided, if possible, by careful planning, but checking of results should be constant and careful, and measures should be taken to make instruction effective. Materials of use to the teacher in developing work attitudes, skills, and habits are suggested.

SUGGESTIVE PROBLEMS

1. Prove that the assumption that primary pupils may be taught the importance of study is untenable.
2. Under what circumstances do children think of work as pleasurable?
3. How can children be led to form high ideals of achievement in study?
4. Which is more important to the primary child, to get right attitudes or to develop skills?
5. Are schools generally equipped at present to emphasize informational reading in primary grades?
6. What sources may you consult for a plan for teaching phonics in grade one?

7. Why should children be given speed drills in primary grades?

8. Which comes first, generally, habit or skill, in teaching? Are they the same thing? How do they differ?

9. Do teachers, in general, consciously develop study habits? Give evidence.

10. What diagnostic and remedial work is suggested for grade one?

SUPPLEMENTARY READINGS

1. Anderson, C. J. and Davidson, I. — *Reading Objectives*, Chapters VII and IX. Laurel Book, 1925.

2. Germane, C. E. and Germane, E. G. — *Silent Reading*, Chapters XI and XII. Row, 1922.

3. Jenkins, Frances. — *Reading in the Primary Grades*. Houghton, 1915.

4. Parker, S. C. — *Types of Elementary Teaching and Learning*, Chapter V. Ginn, 1923.

5. Pennell, Mary E. and Cusack, Alice M. — *How to Teach Reading*, Chapter XI. Houghton, 1924.

6. Stone, C. R. — *Silent and Oral Reading*, Chapter III. Houghton, 1922.

7. *Twentieth Yearbook*, Part II, National Society for Study of Education. Public School Publishing Co., 1921.

8. *Twenty-fourth Yearbook*, Part I, Chapter VII. Public School Publishing Co., 1925.

9. Watkins, Emma. — *How to Teach Silent Reading to Beginners*. Lippincott, 1922.

10. Wheat, H. G. — *How to Teach Reading*, Chapter XI. Ginn, 1923.

CHAPTER XIV

Reading and Study in Grades Two and Three

Importance of the second and third grade period. — The second and third grades have been designated as "a period of rapid growth in fundamental attitudes, habits, and skills." [1] The writer would add that knowledges about books and how to study are implied incidentally in this statement. As is suggested in the chapter referred to, it would seem wise to emphasize these knowledges directly. Reading attitudes, habits, skills, and knowledges are rapidly developed in these grades. Children come to read books of either story material or simple factual material with ease and skill. It is a period of great importance because, if instruction is poor, children fail to perfect word-recognition, continue bad habits of eye movement and lip movement, and become readers of words instead of readers of thoughts and ideas. It is believed that the battle for the establishment of basic attitudes and skills in efficient reading and study may be largely won or lost in these grades. Failure to establish right habits results in greatly increased need for diagnostic and remedial

[1] *Twenty-fourth Yearbook*, Part I, Chapter III.

work in fundamental mechanics in the following grades in which the child should instead be getting a wide experience with the good books of the world, rapidly accumulating information, and perfecting study skills and habits. This period, then, is full of opportunity and responsibility for the teacher who looks upon instruction in reading as a building of permanent life attitudes, knowledges, skills and habits in the use of books and the use of these attitudes, knowledges, skills, and habits in study situations after the necessity for attention to mechanical skills is less crucial. Surely nothing could be more mistaken than to regard this period as one for emphasis upon the mechanical features of reading primarily.

General features of the course in reading and study for this period. — The course in reading and study for this period carries on in much the same manner as that suggested for grade one, adding certain knowledges and skills and perfecting certain habits. The purpose of the course is to cause teachers to emphasize the application of reading as well as the formation of reading skills. Special attention to these matters is necessary or they are forgotten in the midst of the many necessities of the general course of study. The reading course emphasizes, therefore, detailed activities and objectives as a means of bringing reading and study habits into the foreground and showing the child the great importance of reading as a means of gaining information and pleasure as well as of indirectly training him in the formation of other desirable habits.

SECOND GRADE

Attitudes toward study. — The desirable attitude toward study remains the same for grade two as for grade one. It should be characterized by willingness and desire to work, desire to be of service to others, desire to excel, or to emulate those who do well, a sense of responsibility, and perseverance in the work to be done. These attitudes are to be developed by stress upon proper activities. The suggested activities parallel those in grade one with some additional developments.

1. *Select the activities of the school carefully.* The same types of activities in reading and study that were suitable for grade one are, in a more complex form, suitable for grade two. The use of action, direction, matching, reading to find answers to questions, dramatization, and the like are particularly suitable still. The reading of many interesting supplementary books, the use of informational material, and the organization of projects and excursions that require reading as an activity help to motivate reading and make it enjoyable and profitable. As long as it meets the child's needs and he succeeds at it he will persist in it. It is to be noted also here, that the use of books for the work type of reading becomes possible. The child thus gets the right attitudes toward both types of books. The initial stages of true study are already begun.

Types of suitable informational material are found in certain of the newer readers. Among them may be found lessons on care of books, care of pets, how to

work economically, how to give directions, etc. Two examples follow:

How to Direct People [1]

Did a stranger ever say to you, "Little boy, can you tell me where Mr. Smith lives?"

Very often people are on a strange road or in a strange town. They must ask some one which way to go.

It is hard to direct people so that they can find a place easily. You must think just where the place is. Make your directions very clear.

One day two little boys were playing in the street. A man said, "Boys, can you tell me where to find Mr. Brown's house?"

Tom said, "Oh, it's over there around the corner just a little way. It's a white house."

Tim said, "Go down this street two blocks, turn to the right and go one block. It is the large white house on the corner."

Would you rather have Tom or Tim direct you?

Tell your class just how to go from the school to your home.

How to Answer the Telephone [2]

I answer the telephone at our house. This helps mother and father very much. When the bell rings, I run quickly to the telephone. I take the receiver off the hook. I say, "Hello." If some one wishes to speak to my mother, I say, "I will call her." Then I tell mother that some one wishes to speak to her on the telephone. If some one wishes to speak to my father, I say, "I will call him." Sometimes my mother is not at home. Then I say, "My mother is not at home just now. May I take your message?" When some one gives me a message, I try to remember just what is told to me. I give the message to my mother just as soon as she comes home. If some one wishes to leave a number, I write it neatly on a piece of paper and put it where mother or father will be sure to see it.

[1] Howard, I. M., Hawthorne, A., and Howard, M. *The Language Garden*, pp. 98–99. Macmillan, 1924.

[2] Horn, E., and Shields, G. *Learn to Study Readers*, Book I, pp. 33–34. Ginn.

In addition to reading exercises, reporting and discussing problems, correlated handwork, reading games, and other activities that the child enjoys, create favorable attitudes toward the school.

2. *Make it possible for the child to succeed.* There is often a serious break between the first and second grade. Sometimes the teacher of the second grade assumes too much ability on the part of the child, fails to review the work of the first grade early in the year, and thus causes some children to cease progress for a time. The teacher needs to avoid the break between second and first grade, to begin with easy material, continue exercises used in the first grade, and build upon the foundation already laid by the first-grade teacher. Some children will need phonetic drill, some will need much practice in rapid reading of easy material, and some will need to have special personal attention to remove fears, prejudices, the sense of failure, and other undesirable habits.

The general program must be gauged carefully to the needs of individuals and to groups. Some classes are more advanced than others; some children need more drill on the skills they have partly learned. The teacher should review the suggestions given under this caption in grade one and arrange her program accordingly. The same care as was suggested there is needed in making it possible for each child to succeed in something each day.

3. *Utilize the child's desire to do something for someone else.* In connection with all the work of the school, the opportunity comes to be altruistic. In the work

type of reading, it will come quite naturally in certain types of exercise. If one child fails to understand a direction or to read a card properly, have another child help him, not to show that he can do it better, but as a form of service to someone else. There are certain types of exercises which require pairs of pupils to perform them. For instance, the Hoover Silent Reading Cards[1] make use of this principle. While coöperative study may seem undesirable until children have learned to read independently, nevertheless little harm will be done if some use of this idea is made. Children, as well as adults, if properly trained, like to do things for other people and like activities which involve such service.

4. *Utilize indirect influences to cause child to like work with books.* Children respond to models held up to them. Their attitudes and ideals are formed by contact with people, the things they see, by the direct experiences they have, and by the things they read. In a questionnaire study made a few years ago, the writer found that when children were asked, "Whom do you wish to be like when you grow up?" an astonishingly large number gave the names of Washington, Lincoln, Roosevelt, and other national heroes. Some wished to resemble Tom Mix, Mary Pickford, or other actors and actresses, and a very few said they wished to resemble mother, father, or teacher. The writer maintains that permanent attitudes may be formed by the reading of stories of great men. And the elements in the life of the great men which are held up

[1] Wheeler Publishing Company, Chicago.

for admiration are admired. It is suggested that in the lives of Washington, Lincoln, Franklin, Roosevelt, Wilson, and other national heroes the love of books and their use in attaining prominence is often neglected in favor of military or political greatness. The book had a big place in such lives and this should be brought out clearly. The following is a suggested method to be used with the story of Lincoln and his books.

Suggested Questions

1. Why did Lincoln borrow so many books?
2. What books did he borrow?
3. What did he do with them?
4. How did he study them?
5. When he got through with them what did he do?
6. Tell a story about Lincoln to show that books helped him to succeed.

A discussion of similar points will bring out the importance of work with books in the lives of many men who have risen in the world.

5. *Praise judiciously the good work children do.* The teacher's approval is one of the most potent forces that influence the work of children. The things the teacher emphasizes often assume great importance in their eyes. It is suggested that the teacher especially commend the child who has shown earnestness and skill in reading and study situations. Praise is used to encourage many other achievements and is equally potent here. The general effect is to raise, in the estimation of children, the activities that are praised.

6. *Do not put work exercises in an unfavorable light.* Give work exercises every advantage. Appropriate

reading of the work type should be used as much as that of the recreational type. Informational material can be made equally interesting. Generally the vocabulary is simple and the facts useful. Children have innumerable questions they would like to have answered. The teacher can make use of this need by using appropriate simple reading material either prepared by herself or in book form.

7. *Let the child complete what he begins.* A child should complete what he begins. This is only another way of saying, "Encourage persistence at his reading and other study tasks." Some children very early form the habit of giving up at the first difficulty. The teacher should guard against this by seeing that the tasks are not too difficult and by insisting on their completion. Of course, children generally are anxious to finish reading a story or an interesting bit of factual information. There are some types of exercises in reading, however, such as finding answers to questions, completion exercises, and drawing exercises which some children find difficult to complete. The child should be encouraged to assume the attitude that of course he can do what the teacher asks.

8. *Let the child grow in responsibility.* Little children are, it is recognized, unable to be responsible for a task of any great difficulty or one that requires extensive concentration. Do not, however, let your pupils lean too hard on others. Encourage them to master a difficulty for themselves with increasing frequency, and where you have given them a reasonable task, encourage persistence and a feeling that it ought to be done.

Knowledges about study. — Children learn incidentally many facts about books and study, but it is urged that facts about books and how to work with them may be introduced directly in the second grade. Talks about books, incidental reference to books, emphasis upon factual books as well as fanciful ones, teaching the child to find answers to questions in books, and similar devices will give the necessary information. The same types of knowledges apply as are found in grade one. They are discussed here from the point of view of the needs of children in the second year.

1. *Continue talks about books.* The teacher's attitude toward books and her mature knowledge of books and their uses should gradually be imparted to children. While books are not all of learning and study, they constitute a large and important part of it. The teacher who regards herself as a guide to children in the process of their becoming educated will realize the importance of this task. Books should be introduced to children at first through reading to them. But children in this grade rapidly acquire skill in reading; the teacher, therefore, will stand as a chief usher to the world of books and through simple discussions of books and their uses will make clear to the child fundamental facts about them. Simple comments and bits of information dropped incidentally, as well as more formal discussion, will help to introduce the child to interesting books of stories and simple factual material. This should be regarded as a major objective in developing right attitudes in reading and study. Books may be offered with such comments as these:

Children, here is a new book. It is about real boys and girls. There is a story in it about a boy and his sister who went on a long trip on a train. How would you like to read it?

Last term I read to you out of a book about robins. You remember how big robins feed the little robins. I have found a true story about robins. Have you any questions you would like to have answered about robins? [Pupils ask questions.] Let us read this story to see if it tells anything about robins that we do not know. Perhaps it will answer our questions.

2. *Books for recreational and informational purposes.* The teacher may make the distinction between story books and those containing myth and folk lore, and those which contain facts true to life. Books for play are to be read for fun; books for work help the child to find answers to his questions and help him to learn about things that are new to him. It is not suggested that the teacher preach a sermon on work with books, but merely that she call the children's attention to the difference in the two kinds of books, not, of course, reflecting upon the value of either. For example —

Children, here are two books. This book you know; I have read you a story from it. Can you remember the story I read? Now, I have here another book. This is a book that tells you the things you want to know about birds. Do you like to read about birds? This book is full of true things about them. I think you can read it. Try to read it and let me know how you get on with it.

3. *Have children find answers to questions in books.* Children can now read for themselves certain of the simple books such as, Craig's, *Nature Study for Boys and Girls*,[1] Ross's *Reading to Find Out*,[2] and others to

[1] Graded Series. McIndoo Publishing Co., Kansas City.
[2] Macmillan, 1923.

find out things they would like to know. The teacher may introduce the lesson by raising some questions on the subject presented in the book, and encouraging the children to do likewise, or questions may develop incidentally. As soon as the children have raised some questions, they may read the book to find answers to them.

Other problems or questions raised by the children can be answered from books which they are unable to read for themselves, the teacher taking care to explain the nature and the value of such books and encouraging an interest in them. Every teacher in these grades should have access to such books as *The World Book*, *Compton's Pictured Encyclopedia*, and other valuable material of like character. Later, in grades three and four, the child will begin to read them for himself.

4. *Let them find the answers to their problems independently.* Children who show exceptional reading ability may be given material which answers problems they have raised and be allowed to attempt to find the answers. This will challenge them to desire to read. A small library of interesting factual books, such as is suggested in Chapter VII of the *Twenty-fourth Yearbook*, Part I, pages 210–211, should be furnished for this work.

5. *Give some simple rules about work with books.* The two simple rules or principles of work with books suggested for this grade constitute a first step in developing a thorough understanding of such principles of study as are now available in books on educational psychology and how to study. It is advocated that two or three

simple principles be developed with the children. The knowledge that books should be read for some purpose and that there are different ways of reading cannot be gained too early. This can be done as a part of the reading instruction in connection with suggestion 2, 3, and 4 in this section. Such rules are as fundamental as "Do not touch the fire" and "Throw a ball like this."

Skills to be developed in the second grade. — The skills to be developed in grade two are built directly upon those in grade one with the purpose of gradually developing and enlarging them. They do not differ materially in kind from those of grade one, but naturally, certain additions are made because of the rapidly developing ability of the child to read.

1. *Continue to emphasize thought in all reading.* Thought should be emphasized in all reading. This caution needs to be repeated again and again. Interest in developing independent word-recognition, attention to phonetic analysis, and desire to perfect oral-reading ability can easily crowd out consideration of thought-getting in this and the following grade. Therefore the teacher must follow each exercise in reading by reproduction and comprehension exercises and must have children read for specific purposes. Preliminary drill lessons may well deal primarily with mechanical things; but when the child opens his book, then he must assume the attitude of attention to content. The adult's interest in mechanical perfection, as a teacher, must not crowd out the child's interest in results as a reader and in using reading for information and pleasure.

Drill exercises of the thoughtful type include many exercises in action, direction, matching, drawing, and the like, either as flash-card exercises or as blackboard exercises of one kind and another. The variety is too great to permit extensive illustration here. Samples of various supplementary drill exercises are to be found in the *Twentieth Yearbook*, Part II, and the *Twenty-fourth Yearbook*, Part I, and in other publications. These are referred to and examples given in this and the following chapter.

Thoughtful reading exercises in books may include such types as follow:

a. Reading to answer questions and problems.
b. Reading to reproduce the main thought.
c. Reading to set down the main points.
d. Reading to locate a word, phrase, or sentence.
e. Reading to find the best things in the story.
f. Reading for fun without any specific purpose other than enjoyment.

Extensive reading of the thoughtful type is encouraged by all the drill exercises suggested in the preceding pages and by practice in rapid thoughtful reading directed by appropriate questions or in response to other motives aroused by the teacher.

It is, of course, essential that the teacher should constantly prepare children for such reading by preliminary word and phrase study and suitable phonic exercises. The vocabulary of the material selected for such exercises must be familiar and easy. Too many new words will make the reading difficult if not impossible.

2. *Continue drills in reproduction of stories; add*

reproducing of factual paragraphs. The common emphasis upon reproduction of story material must yield in a measure to practice in reproducing factual materials which are suitable for such an exercise. Do not allow children to get the idea that all reproduction is a matter of giving the sequence of events in a story. If materials are unavailable in your method reader, add one of the newer types of factual reader for this purpose. Reproduction of the main ideas in factual paragraphs should take such form as the following quoted reproduction of a paragraph on how to cross a street.

Before you cross a street, stop and look both ways. If there is a policeman near, ask him to help you. If cars are coming either way, do not cross. Wait until the policeman tells you to go. If there is no policeman, ask some older person to help you across. If there are no cars either way, run across quickly. Always look both ways before you cross.

3. *Continue exercises in following directions, in dramatization, etc.* Blackboard lessons, charts, or hectographed material for developing speed and comprehension in reading become more complex in this grade. Whereas the child in grade one was required to

Find the ball
Run to the window
Draw a yellow orange, etc.,

the child in grade two must do exercises in advance of these. Longer phrases and sentences will be used, such as,

Go to the cupboard, find the [name] *Second Reader*, and open the book to the table of contents.

Find the story in your reader which tells about George Washington and the cherry tree.

The purpose of these exercises is to give specific training in fundamental reading and study habits. Mechanical abilities of the right sort and fundamental attitudes toward reading as an informational activity are established by these exercises.

4. *Continue phrase-flashing exercises as in grade one with materials of increasing difficulty.* When speed is to be emphasized, phrase-flashing materials similar to the above are used instead of the blackboard, charts, or hectographed sheets. Drills of ten minutes per day during grade two are recommended. Familiar material, or at least material composed of words already known, should be used. There are many types of phrase-flashing exercises now offered for schools by various publishing companies. Many of these contain such exercises as have been indicated in the preceding sections. Some are recognition cards for oral reading chiefly and must be supplemented by cards made by the teacher. Flash exercises intended for first grades are useful in second grades for the purpose of giving rapid review.

The object of these exercises is, of course, to help the child to establish good eye movements. While their use in this connection has been questioned by Gates,[1] others have found that rapid improvement follows their use. They at least furnish interesting material which highly motivates reading.

[1] Gates, Arthur I. *The Improvement of Reading*, p. 173. Macmillan, 1927.

Types of such exercises include —

Action and Direction Sentences

Show the class how to open a door properly.
Find the page in your reader that tells about how to feed birds.

Completion Exercise

The dog is a —— to children.
He likes to eat —— and ——.
He should not have much ——.
He should have plenty of —— water.

True-False Exercises

It is polite to wait until your father and mother are seated before you sit down.	True	False
Wearing your cap in the house is polite.	True	False

Multiple Choice

The fork should be used in the { left / right } hand.
The napkin should be placed { under the chin. / over the lap.

Oral Response

1. What is the best way to hold a pen?
2. How should the paper be placed?
3. How should one sit at a desk?

These are only a few of the varied types of exercises appropriate for flash-card or other rapid-exposure exercises.

5. *Reading to answer questions and problems.* Systematic exercises in reading to answer questions and problems should be given throughout this grade. Factual material is needed for this purpose. Narrative material may be used, if handled judiciously; but stories are not read primarily for factual or problematic purposes. Questions on stories should be largely such as to influence appreciation. Proper attention to this type of

reading ability in grade two will pave the way for greater emphasis upon the work type of reading in the following grades.

6. *Continue instruction in opening books, etc.* A few skills, such as those mentioned in grade one, need to be perfected in grade two and additional skills added. Children can learn to use the table of contents accurately and to find the author's name. The importance of these items may be pointed out. The purpose of the binding, its use, handling the book properly, etc., are also rightly emphasized. It is not too early to teach about having a proper light for reading.

7. *Enlarge informational vocabulary.* Most children get a story vocabulary in the first and second grades. The informational vocabulary should not be neglected. Children should read any type of street sign or direction, use the calendar, tell time, and read newspaper headlines and simple paragraphs of news by the end of this grade. This means attention to common and familiar words whether they come in the method reader or not. The addition of a reader made up of chiefly factual material will help to teach this vocabulary. Special lessons given by the teacher will also help. The child should know his street address, should read street names, etc., easily. He should be familiar with such common words as *automobile, street car, omnibus, boulevard, reaper, corn-plow, binder,* or such other local terms as are found in his environment and should show an interest in reading all such words as he is likely to meet often in his out-of-school life.

8. *Continue lessons in observation.* Lessons in obser-

vation should be continued and skill in reporting observed things should be developed. This encourages the use of a good vocabulary and helps to develop fluency. It also helps to tie up life experiences with reading experiences. It may well come as a part of the work in language training. Its use in study situations is obvious.

9. *Writing.* A few sentences about things seen or read about, with emphasis upon neatness and clarity, may be attempted. The more nearly these sentences express the child's own ideas, or arise as a necessary part of some interesting activity, the better.

Habits to be formed. — The importance of the translation of attitudes, knowledges, and skills into permanent habits of thinking and doing was sufficiently urged in Chapter XIII. Reference to the outline in Chapter XII will reveal that these habits are the same as those in grade one with additional emphasis upon maturity of development. Certain cautions will be added briefly to the foregoing suggestions.

1. *Guard against a negative attitude toward the work of the school.* The teacher must guard against the development of a negative attitude on the part of the child. This means constant watchfulness against undesirable influences of older children, home influences, and the like, and continued effort to make the activities of the school a part of the child's life. Care to make tasks result successfully is most important.

2. *Habit of accurate and rapid reading.* Before leaving the second grade, children should read second readers without appreciable difficulty and should show

ability to read easy factual material written on the blackboard without many errors in word recognition if the vocabulary used has been taught. Ability to attack new words should be developed.

3. *Following directions.* Children should readily follow such directions as the following:

> Take your reading books from your desks.
> Open the books to page 27.
> Read the story and prepare to answer these questions.

4. *Perfection in mechanics.* No noticeable lip movement, no finger pointing, regularity of eye movement, and ready recognition of words should be characteristic of these pupils. Ability to attack new words should be noticeable. A large vocabulary of common words should be known. The child should recognize easily from 1000 to 1500 words at the end of the second-grade period. Phrases should be read as phrases. Marked ability in flash reading and finding references in the text should be shown. Skill in these abilities indicates good mechanical habits and habitual reading for thought.

5. *Ability to concentrate.* Concentration on appropriate tasks should at this time be noticeable. Few children should show inability to concentrate for fifteen to twenty minutes at a time on any interesting task.

6. *Liking to work.* The schoolroom should show an atmosphere of industry and pleased occupation with interesting and worth while tasks.

7. *Increasing interest in books of informational character.* The habit of reading informational books or of

using them for reference should increase. In the past, boys, particularly, have shown this type of interest. There is no reason why girls should not be interested in informational books, too. The preceding program will have developed the habit by this time, if it has been followed faithfully. Good informational books are appreciated even by young children.

8. *Promptness and industry.* An outgrowth of all the outlined program for this grade — a by-product of good work in other directions — is the habit of being prompt to begin tasks and of habitually working when work is the order of the day.

9. *Neatness in use of material.* A distinct advance over grade one is expected in neatness. Children's books at the end of grade two should be objective evidence of the presence of habits of effective and careful handling of books. The children should show a disposition to keep their hands clean and to refrain from tearing and disfiguring books.

10. *Observation.* Children should be constantly reporting on outside events and happenings and should do this without urging from the teacher. Such observation is the basis for much learning that is independent of books.

THIRD GRADE

It seems unnecessary to go into as much detail for grade three as for the preceding grades. Instead of discussing each item in detail, therefore, the particular additions to the program of the preceding grades only will be discussed. Fundamental attitudes, knowledges, skills, and habits have now been introduced. Certain

skills are added and these will be discussed in more detail.

Attitudes toward study. — At this point the reader should review the detailed outline in Chapter XII. The attitudes for grade three are practically indentical with those suggested for grades one and two. Care should be taken to produce an atmosphere of pleasant and profitable employment in the school. Work should be worth while and pleasant. Care should be exercised particularly to counteract influences from the outside which would tend to detract from the work of the school. The school must be made more interesting and more attractive than any other place to which the child can ordinarily go. Use must be made of such direct influences to make attitudes right as are suggested in preceding discussions.

Knowledge about study. — The chief change in this period will be an increased independence on the part of the child and a marked increase in ability to perform independent tasks with books. The use of books for reference purposes in problem and project work becomes possible. Books of informational material are more plentiful for this grade. The teacher may therefore add certain definite information about books, call the children's attention to good books on informational topics, and add certain knowledges about study as indicated in the outline. Great progress in independent use of books for informational purposes will result. Children of this grade will undertake projects of considerable magnitude and read eagerly to answer problems in connection with such projects if given sufficient

training in rapid silent reading. They can therefore be directly instructed as never before in such matters as the use of table of contents, index, taking notes, writing a summary, and making notes for oral reports. They will formulate simple rules of work or study under the skillful guidance of the teacher. This grade may be said to be the first in which the program of reading and study really gets under way.

Skills to be developed. — 1. *Reading as a thought process.* Children are now sufficiently independent in word-recognition to respond more and more readily to thoughtful reading situations. They should be generally given word and phrase drills separate from the reading situation. Appreciation lessons in literature, both oral and silent, should begin to take on the form of real listening lessons and of intelligent, though necessarily simple, discussions. Reading as word-calling should have no place in this grade.

The different types of thoughtful reading exercises are similar to those in the preceding grades but more complex. Exercises in rapid reading include many specific purposes such as:

a. Reading to get the main thought.
b. Reading to get the supporting details.
c. Reading to judge the value of the material read.
d. Reading to locate a reference.
e. Reading to answer a question or solve a problem.

These types of reading involve the use and development of skills much needed in effective work with books.

2. *Reading for reproduction.* Children are now able to read stories independently and reproduce them for their classmates. They should be given much practice in telling stories they have read and in reporting on facts read in informational books. Such practice is good for the development of language ability, an important ability in study and in life.

3. *Exercises in informational reading.* Pupils in this grade should be given definite training in informational reading. They can read from children's magazines, pamphlets, and certain well-selected informational books to answer questions or problems set for them by the teacher. Definite training exercises in such reading should be a part of lessons in community life and such projects in industrial arts as are common in this grade. The school library should contain a list of good information books for this kind of reading.

An example of a lesson in informational reading is the following taken from the *Twenty-fourth Yearbook*.[1] This is a type of reading of which there is too little in the earlier grades.

How to Remember

Close your eyes and try to tell in order all the things which will stop nosebleed. You could not remember them all, could you? This was because you had read the lesson only once. We do not remember things very well if we read them only once. We remember them somewhat better if we read them two or three times. If you will do the following six things, you will be able to remember what you have read:

1. Read it through carefully once.
2. Choose the main things which you want to remember.

[1] Part I, p. 104.

3. Close your eyes and try to say these main things.
4. Look back to see if you missed any.
5. Try this until you can say them all.
6. Act out the main things which you have learned.

Use these six rules in studying the lesson about the nosebleed.

Another type of informational lesson involves rapidly reading a longer selection to answer certain questions. For example Knowlton's[1] *First Lessons in Geography* contains much easy informational material which might be read rapidly to answer questions and solve problems in the study of food, clothing, and shelter. An example may be taken from any portion of the book. On pages 169–78 is an article on "How We Get Our Fuel," which may be read to answer the following questions which are appended to the article on page 178.

1. What is a volcano? Lava?
2. What is the difference between a shaft and a tunnel?
3. What is a radiator? A flue?
4. What is petroleum? What else that you have read about, besides petroleum, is sent to a refinery?
5. What kinds of fuel have you read about in this chapter? How is each used?

The material is illustrated by the following paragraph taken from page 169:

You have already learned that shelter and clothing are both useful to us because they keep us dry and warm. Any well-built house will keep us dry; but not even a king's palace could keep us warm on a cold day without a fire to heat it. In this chapter you will learn about the things that Man burns to make fires, and how he uses fire to keep himself warm. In the next chapter you will learn about other ways in which he uses fire.

Another book which may be read for informational

[1] Knowlton, P. A. *First Lessons in Geography*. Macmillan, 1934.

purposes is Patch's [1] *First Lessons in Nature Study*. Appropriate problems on questions for solution are given in Chapter XV of this book. The book will be easy enough for the better pupils to read for extensive informational reading of a semirecreatory character, or for specific reference work. It has a good index.

4. *Exercises in flash reading.* Continue exercises in flash reading in grade three. Flash cards may be used in various subjects for drill on important facts. Health lessons may also include flash-card drills. Samples of appropriate exercises may be found in *One Hundred Ways to Teach Silent Reading*, by Nila B. Smith,[2] and elsewhere. These exercises include direction, matching, true-false, multiple choice, and other objective forms of comprehension tests. As illustrated in the discussion of this problem for grade two, speed is maintained by proper control of the time element as the cards are flashed.

Flash exercises in grade three, whether or not they transfer to reading of content situations as questioned by Gates,[3] are interesting to children and may add much valuable information. They assume the form of action, direction, matching, completion, true-false, or multiple choice exercises, as in the early grades. Examples of suitable exercises here given are taken from a manuscript compiled by Miss Marjorie Pratt[4] under the writer's direction.

[1] Patch, Edith M. *First Lessons in Nature Study*. Macmillan, 1926.
[2] World Book Company, 1925.
[3] *Op. cit.*
[4] Formerly critic-teacher in the Nebraska State Teachers College at Kearney. Miss Pratt developed a wealth of such exercises which have, unfortunately, never been published.

Action

(Pretense. Closely related to dramatization)

1. Be a mother singing her baby to sleep.
2. Be a little girl going to sleep in her chair.
3. Show us how a soldier would march when going to war.
4. Be a conductor taking up the tickets.

Direction

1. Stand at the left side of your desk and clap your hands three times.
2. Fold your arms, shut your eyes, and shake your head.
3. Go to the blackboard and write your name three times.
4. Write on the blackboard two places from which the meat we eat comes.

Completion

(Correlated with community life study)

1. Most of the summer —— are raised at Kearney.
2. Kearney manufactures many kinds of ——.
3. Most of the fruit we eat is —— into Kearney.

True-False

(General information)

1. George Washington was in America before Columbus.	True	False
2. The sun shines every day.	True	False
3. Our mail is carried on trains.	True	False
4. Coffee is more healthful than milk for children.	True	False

Multiple Choice

(Correlated with hygiene)

1. The book should always be held (up — flat) when you read.
2. The book should be held (two — six — eighteen) inches from the eye.
3. Never read a (bad — good — ordinary) book.
4. Never read a book in a (poor — dim — glaring) light.

5. Never face the (window — book — desk) when reading.
6. Let the light come over (right — left — either) shoulder.
7. Rest your (body — eyes — legs) frequently when reading.
8. Cleanse you eyes night and morning with (water — soap — toothpaste).
9. Avoid print which is too (large — small).
10. Never rub the eyes with (a towel — your finger — your handkerchief).

These exercises were used either in the form of flash cards similar to those issued by various publishing houses, or they were mimeographed or hectographed and used as exercises in rapid reading, the child checking the correct answer, filling in the right word, or carrying out a written direction. The exercises were used either preceding or following exercises in continuous reading of informational material.

5. *Use of index.* Although the use of the index is not generally taught in this grade, there is no reason why children should not learn to use it here. The teacher should explain what the index is and how to find a given reference through its use. Books of home geography, such as Knowlton's *First Lessons in Geography*, Carpenter's *Around the World with Children*, and numerous others, may be employed for this purpose. A set of such books is needed for drill in the location of information. A teacher may introduce the index somewhat as follows:

You have learned about the use of the table of contents in your readers and you know how to find a story. There is one other help in books of information that you should learn how to use. It is called the "index." Open your book to page 251 in Knowlton's *First Lessons in Geography*. This is an index.

Can you find out how the index is arranged? Notice that it is

arranged by letters, that is, all things beginning with "a" are listed under "a," all things beginning with "b" under "b," etc. Now I am going to show you how you can find things you want. The first lesson is about ————. Let us see if we can find some questions about this topic. What questions can you ask? [Teacher writes questions on blackboard.]

Now let us see if we can find anything about this question. What is the most important word in your first question? Yes, it is ————. Look in the index under ————. Do you find the word? Notice, then, that opposite this word is a number. This number tells you on what page or pages the word is mentioned. Let us turn to page ——. Read what it says there. Do you find anything that answers your question? That is it.

Now let us see if we can find answers to your other questions in the same way.

6. *Making an outline.* A simple outline of main points in a story or factual article may be taught in this grade. This is done by first demonstrating on the board such an outline and then giving definite practice in making one. Later, when children give reports on certain phases of their project work they may be taught to make a simple outline of the main points on a card. They may be allowed to practice talking from an outline.

Examples of simple outlines may be as follows:

Outline for "Robinson Crusoe's Landing"

1. Robinson Crusoe makes a raft.
2. He finds the sea calm.
3. He gets a gun and some provisions.
4. He puts them on the raft.
5. He goes to the shore.
6. He finds something there.

Outline suitable for a talk on "Deer"

1. What deer are like.
2. What they are called.
   a. stag
   b. doe
   c. fawn
3. Where they live.
4. What they eat.
5. How many there are in our state.

7. *An outline of facts from observation.* Outlining facts from actual observation is merely an extension of the above idea and an application to a different sort of data. If desired it could precede outlining after reading.

8. *Reading to find answers to problems.* Definite instruction of a more advanced character than that previously mentioned may be given in this grade. The child, instead of reading merely to find an answer to a simple question, may be given a simple problem such as, "Read to answer this question: Which character in this story is the older? The story doesn't tell the ages, but you can find out in other ways," or "How do you know that teeth should not be picked with a sharp instrument?"

9. *Instruction in use of books.* The use of the index will be added to the instruction in the use of books. Continued instruction in the use of the parts of books, and in opening and holding them properly should be given, if needed.

10. *Informational vocabulary.* The useful vocabulary of common terms used in the work-a-day world will be developed by increased attention to factual

books. This will also be included in projects in connection with which children learn much by observation and inquiry from adults. The teacher should make special effort to enlarge this vocabulary through emphasis upon much reading and discussion.

Vocabulary exercises on informational subjects help to extend the informational vocabulary rapidly. Classification of the different words under their proper headings may be illustrated by the following word drill. In the study of foods many new words are added to the vocabulary. The teacher places on the blackboard:

Things Bought in a Grocery Store

Fruits	Flours	Vegetables	Drinks	Sugars	Spices	Cereals

The words are mimeographed on a sheet of paper or written in columns and the child is given them and told to put the word under the right heading. If errors are made they are the sign of a need for teaching the vocabulary more completely.

Lists of words to be used in this way are —

wheat	olives	cranberries
graham	granulated	pepper
brown	pulverized	tea
coffee	beets	potatoes
tomatoes	grapes	lemons

pears	dates	oranges
currants	grape fruit	watermelons
rice	figs	oatmeal
rye	onions	blackberries
cornmeal	turnips	apricots
cloves	salt	grape nuts
mustard	chocolate	maple
cocoa	squash	lettuce
parsnips	celery	plums
carrots	red pepper	allspice
cherries	cane	pancake

In the same manner names of places, rivers, mountains, and countries may be used for an interesting drill.

11. *Use of the glossary in reader.* The use of the glossary or alphabetically arranged word list in the grade reader should be developed in this grade. This prepares the child for the introduction of the dictionary in grade four. This is a part of the general instruction in books and their uses. Skill will be largely perfected later. The glossary may be introduced in the same manner as was the index. The simpler diacritical marks may be taught.

12. *Training in observation.* Good language training may be given by means of lessons in observation. These lessons form an important part of the sense training of the child and are fundamental in a reading and study program for reasons stated before. This grade might carry the training further by attempting descriptions of objects brought into the room. Much use of observation should be made in connection with social and industrial projects suitable for this grade.

13. *Training in extensive rapid reading.* Extensive

rapid reading for information and pleasure under teacher-control, as well as undirected reading, should form a part of the program of this grade. Such reading may often be given a purpose by suggesting an objective, such as, finding additional information on a project or solving some definite problem about which there has been a question. Reading for pleasure may be encouraged by allowing certain periods for discussion of what has been read.

A suggestion is given in the *Twenty-fourth Yearbook*,[1] for a device to promote interest in extensive rapid reading.

Outside Reading

The pupils tell the teacher about the books they read. She writes down what they say and places the sheets on the reading table for all to read. Children are eager to read books in order to have their thoughts written down. They also show great interest in reading what others have said.

What Dick told me.

"*Little Dramas* has good stories to act. I wish we could act out the story about the timid hare and the lion. I should like to be the lion. It would be fun to roar."

What Ruth told me.

"I like *Storyland in Play*. The story about the foolish turtle is interesting. The turtle was having a nice ride with the geese. He should not have talked."

The teacher might also ask children to read books to see —

a. If the new book is better than some other book they have read.

b. If it could be dramatized.

[1] Part I, p. 107.

c. What new ideas it has about some subject they have studied.

d. Whether it is funny or serious.

14. *Exercises in following directions.* Assignments may and often should be written on the blackboard and children should be trained to carry out accurately the directions so given. Definite training exercises will develop the ability rapidly. Lessons in illustrating a story or article, or dramatizing either, will also help to lay the proper emphasis on reading for thought and upon accurate comprehension.

15. *Exercises in phonetics.* It is desirable to discontinue exercises in phonetics as class exercises as soon as children have considerable accuracy in word recognition and to use such exercise, only for individual children who need it. Dictionary drills should take the place of phonetic training by the latter half of the third grade.

16. *Written language.* Exercises in writing answers to problems, taking down outlines, and even writing short paragraphs of a few sentences about some subject in which the child is interested should be begun in this grade for the purpose of building up proper language habits. The ability to record data accurately is highly essential in efficient study. Simple letters may be written.

Habits to be formed. — The habits which should become automatic by the end of grade three are not different from those in grade two except in the nature of their development. The child has, however, in-

creased his efficiency. It may be said that at the end of grade three children should have, to a marked degree, a hearty interest and liking for work with books, a permanent interest in recreatory reading, and a definitely recognizable ability to use books to answer their problems. The additional development in this grade is a pronounced growth in ability to read books independently, to find useful information, and to use such information in discussion periods. More mature habits of recording information and reporting it, as well as better observational powers, should have developed.

Materials. — Suitable books for use in developing habits of study and reading for information are difficult to find. The following list has been made up by one who is well acquainted with material in this field.[1]

GRADES I AND 2

HISTORY

Morcomb. *Red Feather Stories* [2]	Lyons
Jewett. *Hopi, the Cliff Dweller*	Educational Pub. Co.
Dopp. *The Early Cave Men*	Rand
Dopp. *The Tree Dwellers*	Rand

GEOGRAPHY AND TRAVEL

Fairgrieve and Young. *Children in Many Lands*	Appleton
Olmstead and Grant. *Ned and Nan in Holland* [1]	Row
Schillig. *The Four Wonders*	Rand
Hall. *Weavers and Other Workers* [2]	Educational Pub. Co.
Chance. *Little Folks of Many Lands*	Ginn
Perdue. *Child Life in Other Lands*	Rand

[1] The writer is indebted to his colleague, Miss Bess Goodykoontz, for the compilation of this list and that given in Chapter XV.

[2] These books have been used successfully in the first grade.

PLAY

Ross. *Reading to Find Out*	Macmillan

SCIENCE

Lucia. *Peter and Polly in Winter* [1]	American
Meyer. *Orchard and Meadow*	Little
Meyer. *The Outdoor Book* [1]	Little

Grade 3

HISTORY

Nida. *Letters of Polly the Pioneer*	Macmillan
Otis. *Mary of Plymouth*	American
Bass. *Stories of Pioneer Life*	Heath
MacElroy. *Work and Play in Colonial Days*	Macmillan
Snedden. *Docas, the Indian Boy*	Heath
Eggleston. *Stories of Great Americans*	American

GEOGRAPHY AND TRAVEL

Shepherd. *Geography for Beginners*	Rand
Fairgrieve and Young. *Homes Far Away*	Appleton
Knowlton. *First Lessons in Geography*	Macmillan
Allen. *How and Where We Live*	Ginn
Perkins. *The Dutch Twins, The Eskimo Twins, The Japanese Twins*	Houghton
Carpenter. *Around the World with the Children*	American

SCIENCE

Craig. *Nature Study for Boys and Girls*, Book I	McIndoo Pub. Co.
Miller. *First Book of Birds*	Houghton
Patch. *First Lessons in Nature Study*	Macmillan

CITIZENSHIP

Bailey. *What to Do for Uncle Sam*	Flanagan
Waldo. *Safety First for Little Folks*	Scribner

[1] These books have been used successfully in the first grade.

Diagnostic and remedial work. — The need for diagnostic and remedial work in reading is probably never absent. It is, however, less pressing when a well-planned program is followed. As the children go on through the grades certain ones will fail to progress as satisfactorily as is desirable on account of mental inability and various distracting influences. In addition to checking individual weaknesses in mechanics of reading it is suggested that a careful check be made on all the desirable attitudes, knowledges, skills, and habits in study. This, the teacher will have to do constantly. Individual cases will be fewer than formerly but the individual must not be lost to sight in the group.

Devise tests to detect the presence or absence of desirable skills and habits. Diagnose the weaknesses of the class frequently and teach again those things which have been poorly learned.

SUMMARY OF THE CHAPTER

In this chapter an effort has been made to discuss in detail the significance of the program for the development of habits of reading and study outlined in Chapter XII. The attitudes, knowledges, skills, and habits of study in grades two and three exhibit rapid development, for this is a period in which the child is learning rapidly to read and use books. It is most important that the program for the establishment of good reading and study habits be successfully launched and developed; otherwise technical skills in reading may be developed without securing an applica-

tion of those skills in useful situations. Especial care must be used to insure the continuous development of right attitudes toward study and work of all sorts. More and more responsibility for good work must be thrown upon the child. Knowledges about study and books may be rapidly increased. Skills in extensive rapid reading and in the use of books in projects should develop rapidly and the child, at the end of the period, should have taken initial steps in the formation of many of the major habits of successful study. A good equipment will include a reasonable amount of suitable factual material for the library. Diagnostic and remedial work will be less necessary than under former programs of reading development but individuals must still be checked for weaknesses and remedial instruction given.

SUGGESTIVE PROBLEMS

1. What should be the general effect of emphasizing study attitudes, knowledges, skills, and habits in these grades?
2. What types of development in reading skills are characteristic of these grades?
3. Why is it important to introduce informational books as well as story materials?
4. Suggest the manner in which children may use simple books in their projects.
5. How large should be the library in these grades?
6. Discuss the importance of reading for specific purposes as a skill in study.
7. How many books should a child read independently in grades two and three?
8. Show whether or not the ordinary school library has well selected factual material in sufficient quantity for practice in informational reading.

SUPPLEMENTARY READING

1. ANDERSON, C. J. and DAVIDSON, I. — *Reading Objectives*, Chapter VIII. Laurel Book, 1925.

2. GATES, ARTHUR I. — *The Improvement of Reading*. Macmillan, 1927.

3. GERMANE, C. E. and GERMANE, E. G. — *Silent Reading*, Chapters XI and XII. Row, Peterson, 1922.

4. PENNELL, MARY E. and CUSACK, ALICE M. — *How to Teach Reading*, Chapter XII. Houghton, 1924

5. STONE, C. R. — *Silent and Oral Reading*, Chapter III. Houghton, 1922.

6. *Twenty-fourth Yearbook*, Part II, Chapter VII, pp. 205–11.

7. WHEAT, H. G. — *How to Teach Reading*, Chapter XIII. Ginn, 1923.

CHAPTER XV

Reading and Study in Grades Four, Five, and Six

Importance of the fourth, fifth, and sixth grades. — The normal child of ten or twelve years has left the period of formation of fundamental mechanical skills in reading to enter a period of rapid accumulation of knowledges about and attitudes toward the world, and of rapid perfection of habits of reading and study. These habits, properly acquired, should turn him out at the end of the period a well-equipped, independent being who, if need be, can go out into the world, earn his living, and keep in contact through books and reading with happenings of local and national interest. Generally children have been too narrowly circumscribed in the middle elementary grades by preconceived adult notions as to the nature of their development. These grades have been designated by the Committee on Reading of the National Society for the Study of Education as a period of wide reading to extend and enrich experience and to cultivate important reading attitudes, habits, and tastes.[1] The writer is in hearty accord with the general principles set forth in this report which would lead to the rapid enrichment of the training of the child in reading and study in these

[1] *Twenty-fourth Yearbook*, Part I, Chapter III, p. 55.

grades. Here, if ever, the majority of children will establish the habit of reading. Here is the golden opportunity for the initiation, development, and perfection of attitudes, knowledges, skills, and habits of reading and study. Adult perfection is not expected, but if the child cannot read for both information and pleasure, does not turn instinctively to books for answers to his questions, and does not habitually use books in an intelligent way by the end of the period, a great opportunity has been lost. Children have, in the past, been too restricted in the quantity and variety of reading they might do in these grades. They have also been taught by methods which did not encourage habits of rapid extensive reading — including informational reading — and wide reading for pleasure and appreciation. Specific study attitudes, knowledges, skills, and habits have not been developed by a clear, definite, and objective program. Generalized objectives have been too common, and rigid adherence to grade progress has discouraged individual development. Reading as study has received no attention at all and has been confined largely to training in mechanics of word recognition and the reading of a few textbooks by intensive methods. All this must give way to a broader, more intelligent, and more extensive program because of the importance of the period as an opportunity for rapid enrichment of life and perfection of fundamental skills already learned. The period is comparable in a way to the junior high school period, except that it is less extensive in character and fundamental skills are "developed" rather than "refined." The Committee

on Reading of the National Society for the Study of Education makes the distinction between this period and the one following in these words:

> A second distinguishing characteristic of the period is emphasis upon conscious learning. In primary grades, growth in ability to read begins by unconscious imitation of the teacher and by following her directions. In the fourth, fifth, and sixth grades, the habits imitated are further developed through wise direction and supervision. In the junior and senior high schools, skillful direction is continued and supplemented by simple explanations of reading processes, deliberate study by pupils of their own habits, and further extensive practice to secure improvement.[1]

It will be noted that nothing in this statement is in opposition to the program outlined for these grades.

General features of the course in reading and study for this period. — During grades four, five, and six great progress is made in independent work with books. The child is encouraged to read in wider and wider units. He comes into contact with geography, history, health study, elementary science, and industrial arts — thus being introduced to the major fields of human knowledge. In connection with this initiation into the world of social and applied science, literature opens up vistas of imaginary worlds to him. It is very easy to allow the child to become a voracious reader of narrative materials and to neglect the perfection of study attitudes, knowledges, habits, and skills. Informational reading may be confined to books on geography, history, health, or elementary science, whereas it should embrace a wide experience with many materials used for different purposes.

[1] *Twenty-fourth Yearbook*, Part I, p. 64.

The program outlined in this chapter sets up a definite sequence of objectives to be kept in mind by the teacher in developing habits of reading and study. It outlines a course of study in the form of somewhat specific activities to be followed. It supplies suggestions for the application and development of reading skills already initiated in work situations, as well as the formation of new skills in reading and use of books. The course is an enlargement and enrichment of that developed in the previous grades.

FOURTH GRADE

Attitudes toward study. — The reader should refer to the detailed outline in Chapter XII of attitudes to be emphasized in this grade. It will be noted that these attitudes have already been initiated and partially developed. The same cautions are to be observed as are indicated in Chapter XIV. In this period the spirit of team play becomes better developed. Accordingly, the idea of one individual's helping another who is not succeeding so well may be utilized. The social instinct is also brought forward through additional stress upon group activities, socialized discussions, and contributions to group knowledge. The careful fitting of the task to the ability of the pupil, the giving of instruction in the doing of tasks, and the making of work happy and successful are necessary phases of a plan for securing right attitudes. The individual is encouraged to better his own previous record as well as to emulate others who have done well. Pride in good achievement may be developed by judicious

emphasis upon the good results attained as a result of earnest effort. Some children will not have acquired group or team spirit; but it is very important that this spirit be brought out and encouraged. The tone of the room should be calculated to secure pleasure in industry. A sense of responsibility for doing not only the pleasant tasks of the school, but the difficult ones as well, should be expected.

Knowledges about study. — The program in grade four expands steadily in extent and in directness of attack. While the child is not encouraged to analyze his own processes as the more mature person might do, he is given direct instruction in the nature of books and their uses and in certain basic facts about study.

1. *Continue to introduce the child to interesting factual books.* The number and variety of interesting factual books which the child may now read is rapidly increasing. Books of travel, descriptions of other lands and peoples, historical books, and books of biography and science are now available for the child's own reading. (See the bibliography on pages 425–27.) He must be guided to interest in these books and to intelligent use of them. Direct instruction must first be given and then extensive reading of the books encouraged. Other books of a more advanced character may be introduced by the teacher and extracts from them read. The child may be aroused to desire to read such books and thus be stimulated to anticipate opportunities to come. The books of informational material suitable for children at this age include geography, history,

nature study, travel, science, and citizenship. Certain magazines are also available, such as the *Nature Magazine*, *Child Life*, and others. Current events can be read in the form of the school papers *Current Events*, *Loose Leaf Current Topics*, and *The News Outline*, and the child may read the children's page in the newspaper and in the women's magazines. Some children will read more extensively. The bibliography on pages 216–18 of the *Twenty-fourth Yearbook*, Part I, is suggestive of books suited to the work type of reading which should be used to supplement textbooks in geography, history, and nature study. Recreatory reading materials are more plentiful, but there is a considerable number of books suitable for a library of information and these should be procured and placed in the room where they may be used. Some of them will be used chiefly for reference, but such books as Patch's *First Lessons in Nature Study*[1] may be read for pleasure by the better readers in this grade. The same is true of other books listed in the bibliography given on page 425, and this list is by no means exclusive.

2. *Use of the encyclopedia.* A children's encyclopedia, such as *The World Book*, *Compton's Pictured Encyclopedia*, or *The Book of Knowledge* should be introduced and its use taught in connection with projects of all sorts. The first use of the book will necessarily be restricted by the child's ability. In later grades more extensive use will be possible; but, even in this grade, the child may look up problems or topics when a specific reference is given by the teacher.

[1] Patch, Edith M. *First Lessons in Nature Study.* Macmillan, 1926.

3. *Instruction in use of textbooks.* The proper use of the textbook should be emphasized. The textbook is a guide and an outline of activities. It is a source of information, but it should be supplemented by other books containing richer and more detailed accounts of events, persons, and processes. Children should be shown in a simple way how to supplement the textbook from reading and observation. The teacher may explain to children the use of the textbook somewhat in this fashion:

Here are two books. One of them is called a textbook. [Showing them, perhaps, a first book in geography.] We have been studying this textbook. What kind of book is it? [Let the children discuss it.] A textbook is a book of information. This one gives us a brief account of the most important things about many countries. But, of course, there are a great many more things to know about a country than what is in one textbook. Let us take a topic from our textbook and see what I mean. In this book the subject we are studying has how many pages? [Question is answered.] Of course that is a small amount. I have another book which is all about ————. In this other book, if I use the index, I can find ———— pages about ————. What do you suppose this book is for? It gives a great many more facts than the textbook, doesn't it? Now let us see what the textbook is for.

As a result of the discussion, the pupils will supply such statements as —

A textbook contains the most important facts.
It doesn't give much detail.
The textbook gives us a start on the subject.
The other book [supplementary] gives us many more facts.
Facts are interesting.
The pictures help, too.
The textbook is an outline.
The supplementary book helps us to fill in the outline.

4. *Use of dictionary.* The use of the dictionary must be taught both as knowledge and as skill. A study of the dictionary, its parts, and its use may be given. This instruction will probably deal with a small dictionary in this grade. Excellent lessons on the use of the dictionary are now available. There should be drill in the rapid location of words and definitions.

5. *Rules of memorizing.* The child has already learned to memorize simple poems. If he has been taught properly it will be unnecessary to begin with initial steps in memorizing a poem by wholes. The problem of memorizing economically may be presented and children taught to know that economy is obtained by the use of good methods. Such simple rules as the following may be developed in grade four:

a. Memorize material that you need all the time.
b. When you memorize, be sure that you first understand what you are memorizing.
c. When a short selection is to be memorized, it is better to read it through from beginning to end than to read sentence by sentence or line by line.

6. *The physical conditions of study.* In connection with the development of proper health habits, the importance of posture, proper use of light, good eating habits, cleanliness, sleep, fresh air, etc., may be emphasized. The importance of having a specific place and time for outside study may be brought out. If the child can be taught the general importance of good health at this time, he can also be taught the importance of health in study situations. There is no reason for

deferring such instruction till the junior or senior high school is reached.

Children should learn such principles as —

a. When you study you should sit upright at a desk in a comfortable position, with your back against the seat and your feet on the floor.

b. The light should come from the rear and the left side if possible. Never face a bright light.

c. If you eat too much before you study, you can't do good work.

d. It is better to eat your heavy meal at night.

e. You can't study well if you are hungry or sleepy.

f. Clean hands keep books clean.

These rules of work may help some children, at least, to realize the connection between good health habits and good mental work.

7. *Study rules.* The simple rules set forth in the outline for this grade should be developed with the pupils as a means of encouraging intelligent use of books. The earlier children learn these simple principles and the sooner they practice them, the more certain is the formation of the habit of using good methods of study. These rules supplement the health rules and the rules for memorizing given under preceding sections.

a. Work hard while you work.

b. Be sure you know what you are to do before you begin.

c. When you come to a word you do not know, consult the dictionary.

d. When you wish to find a reference, consult the table of contents or the index of the book you are using.

8. *The use of charts, maps, and graphs.* Books on geography, history, and health will contain charts, maps, and graphs. The child should be taught to

interpret these devices; and their importance as simple illustrations of facts presented in the text should be emphasized.

9. *Neatness and speed in handwriting.* In their notebooks children now begin to record outlines, summaries, and other materials gathered in connection with their social and industrial projects. This is an opportunity for developing accurate and speedy recording of information and for bringing out the importance of this ability as a factor in successful study.

Skills to be developed. — 1. *Reproduction.* Drills in correct, effective reproduction of factual materials in geography, history, and elementary science should be continued. Effective reproduction of stories should, of course, not be neglected. In the reproduction of factual material, however, rhetorical effects should give way to simple, clear, straightforward exposition. Fidelity to the facts given in the original should be required. This exercise should not, however, take up time needed for the development of other specific skills allotted to this grade.

2. *Rapid-reading exercises.* A variety of rapid-reading exercises should be used in connection with factual materials. Books may be employed for a number of different purposes, such as reading to find a specific word, phrase, or statement; reading to find the answer to a simple question or problem; and rapidly reading a paragraph or series of paragraphs to find the main thought. Various exercises in rapid reading are appropriate for this grade and plenty of practice should be provided. In schools where rapid reading

has not been the rule, such flash exercises in responsive action, following direction, and completion, as well as in oral response as are outlined here, are useful. These exercises deal with informational material, mainly in civics and geography. They may be placed on the blackboard, on flash cards, size 4 by 28, or on a chart. They become speed exercises when the time during which they are exposed is controlled. They may be used either as assignment material before reading or as tests following reading.

Lesson Based on Civics[1]

1. Who furnishes your school books?[2]
2. Where does the money come from?
3. If you injure your books, does this cost your father anything?
4. In one word, tell how he pays.
5. Name four other things besides books that are furnished for you in school.
6. Tell two ways in which you can help save these things.
7. Why is it dangerous to handle books when your hands are dirty?
8. Are your hands clean now?
9. Tell the proper way to open a book.
10. Why should the book be opened in this way?

Lesson on the Use of Books

Have —— hands when using ——.
Do —— mark your ——.
Do not eat —— or other —— when you ——.
Be —— where you put your ——.

[1] The author is indebted to Miss Marjorie Pratt, formerly critic teacher of third and fourth grades, Nebraska State Teachers College at Kearney, for these lessons.

[2] These lessons were prepared for use in a school where books are furnished by the state.

Do not —— your —— on the playground.
Do not —— the —— of your pages ——.
Do not —— the fingers when turning a ——.
Do not loosen the —— of a book.
Do not keep a —— or pen in the book.
Do not lay a book down on its ——.
Do not put the —— of your book in your ——.
Do not —— books.
Open —— carefully and properly.

Lesson Based on Geography

(Map Exercise)

Find on the map the country where homes are made of ice.

Point to the country where homes are made of bamboo with thatched roofs.

Point to a country where homes are built in trees.

Point to the country where palm leaves are used on the roofs to keep the rain out.

Point to a country where homes are made of adobe.

Point to a country that at one time was dotted with wigwams.

Find two countries where people live in wooden homes and homes of brick.

Lesson Based on Geography

(True-False)

Eskimos live in houses made of bamboo and grass.

Hawaiians live in houses made of palm leaves and heavy grass.

Some people in Africa live in houses built in the trees.

The pioneers lived in snow houses.

The Eskimos build their houses of snow because there are few large trees in their country.

The people of Japan build their type of homes because of earthquakes.

Some people live in clay houses to protect themselves from animals.

Indians had two reasons for making skin homes.

We use adobe clay to build our homes.

Lesson Based on Geography

(Completion Type)

——, ——, —— are responsible for many of our forest fires.

Railroad companies safeguard —— regions by —— the land for some distance on either side of the track.

The division of the Department of Agriculture known as the Bureau of —— is preventing —— fires.

More than —— of all the forested land in the United States is in state or —— reservations.

National forest reservations are ——.

New trees are —— in national ——.

National forest reservations are land with —— upon it but which is unfit for ——.

Forests —— our farming country.

Arbor Day means ——.

Geography Lesson Using Reference Books

(Direction Exercise)

Prove by a statement in Tappan's *Diggers in the Earth* that cement absorbs water.

Find a statement in Tappan's *Diggers in the Earth* which tells what cement is made of.

Read the process of tempering bricks as given in Chamberlain's *How We Are Sheltered.*

Using Chamberlain's *How We Are Sheltered*, find the number of days bricks are left to harden before being placed in the kiln.

3. *Index drills.* Children should be taught to use the indexes in their books for reference purposes. Index drills should be given occasionally. The pupil has already learned what the index is and something about its use. He should be given specific drills to perfect skill in its use. Such a requirement as the following is appropriate: "Turn to your index; find *cotton*, and locate the first page reference given." Examples may

also be found incidentally given in later sections of this chapter.

4. *Training in making outlines.* Outlining in this grade should rapidly become more skillful and more independent. In grade three the child has learned to make a simple outline of the key sentences in the paragraphs of short story or factual material. In this grade he may be taught how to fill in the details of a simple outline and how to outline a few paragraphs accurately, supplying supporting details. Continue direct training in reading to find the main point and the supporting details. Obviously the child cannot outline unless he can read.

5. *Talking from an outline.* Continue training in effective presentation of materials from an outline. The outline can well be used in the reproduction of factual materials in connection with group discussions, auditorium programs, etc. It is far better to train children to talk naturally from an outline than to permit them to learn their reports verbatim. Later they may discard the outline by memorizing the main points.

6. *Keeping notebook.* The notebook should assume a larger and larger share in the study of the child as he develops. The purpose of introducing the notebook so early is to give the child the opportunity to develop the habit of using it intelligently, not merely as a formal exercise, but as an aid to retention and as a means of preserving personal observations and reactions to written materials. In grade three the notebook was first introduced in a simple form. In grade four it can be kept as a record book to preserve simple outlines, ref-

erences, and summaries. A working notebook, rather than a piece of handiwork to show at exhibits, should be developed.

7. *Finding answers to problems.* Definite training in finding answers to problems should be continued and enlarged. In this grade children may be assigned problems to look up in supplementary books. Definite page references should at first be given. If sufficient skill in the use of the index is developed, the children may later be given simple problems and questions and told to find answers by using the index. Children should be trained also to raise questions about what they read, to record those questions, and to bring them to class for discussion. In the *Twenty-fourth Yearbook*, Part I, page 113, is an example of reading to answer certain definite problems that illustrates what is needed.

Teacher. You have been interested in the raising of cotton in the Southern states. However, New England, which raises no cotton at all, ranks first in the manufacture of cotton cloth. Why is this?

What are the questions which you would need to answer before you could really account for this fact?

[Discussions of the factors which enter into the situation led to four questions. The teacher wrote the major problem on the board, together with the minor problems.

Problems: How can the New England states, though they raise no cotton, rank first in the manufacture of cotton?

1. Where does New England get its raw cotton?
2. What advantages for manufacturing does New England have?
3. How did cotton manufacture start in this country? What effect did this have on New England?
4. What places lead in cotton manufacture? From a study of the map try to discover why.

She then proposed that the pupils work out the first question together, in order that each might learn how accurately he was able to study such an assignment.]

Teacher. How will you know where to begin to read?

Pupils. Find New England — manufacturing; find cotton — raw.

Teacher. Find either topic. As soon as you have a statement which you think answers Question 1, you may stand.

[Time was given for all pupils to find the answer. Meanwhile, the teacher discovered the pupils who were slow in the use of an index and gave assistance. She also found pupils who could not determine the relevance of statements.]

Teacher. In the same way you are to find the answers to the remaining questions. Work as fast as you can. When you have finished, look at each question, and think how you are going to answer it when we have a class conference. Reread if necessary.

This whole chapter has many excellent examples of other reading-study techniques that should be developed.

8. *The use of books.* Check up on the ability of the child to use books properly as occasion offers. Repairing of torn pages in books and loose bindings may be introduced as an additional skill in the use of books. A good manual on books and their uses should be consulted.

9. *Vocabulary.* The development of a larger vocabulary of useful words should result from the child's informational reading. Attention to the meanings of words — study of synonyms, homonyms, and antonyms — is advocated as an additional aid to vocabulary development. The use of the dictionary should now be given sufficient attention to make the finding of words easy. The encyclopedia should be used to add to the meaning of certain words and terms met in content subjects. This work will necessarily be of a

simple character but the child will secure through it fundamental attitudes and the gradual development of efficient skills in using reference materials.

10. *Reading easy material.* The child should be encouraged to read much simple factual material as well as story material of the usual type. The informational reading is probably best brought about by utilizing the interest aroused by the problems suggested to him in content subjects. Class exercises should be given on this type of reading. Later the children individually should be encouraged to do it for their own pleasure.

11. *Training in observation.* The child should continue to receive training in accurately observing persons, things, events, and processes. His powers of observation should gradually become more acute through training so that he sees more details and sees them more accurately. In this grade his attempts to describe what he has seen should assume the form of short paragraphs of exposition rather than disjointed sentences. Practice can be given in connection with projects in geography, history, nature study, etc.

12. *Following directions.* Exercises in following directions may now become fairly complicated. Children can be given assignments on the blackboard to read and carry out. Instead of a simple exercise such as —

Go to the cloakroom and find your cap,

the child can follow such a direction as —

Take your geography. Look up *Atlantic Ocean* in the index. Write the numbers of the pages referred to.

Or he may work out the following assignment:

Example of Blackboard Assignment

(Following Directions)

The problem to-morrow:

How do the Eskimos make their houses?

Directions.

1. Take your textbook first and read the section on the houses of the Eskimo.
2. Make an outline and, following it, write how snow houses are made.
3. Read to yourself what you have written to see if it is perfectly clear.

13. *Training in comprehension and organization.* Special comprehension exercises in illustrating a paragraph, writing down the questions each paragraph answers, writing a summary, answering a set of questions, and the like, offer a variety of training in accurate reading for thought. These exercises should be used to supplement, and to a certain extent, to displace the traditional oral question exercise. They emphasize and train comprehension of thought rather than memory of words and language forms.

Exercise in Illustrating a Paragraph

Take pencil and paper and draw a picture of the objects mentioned in the following paragraph

This Mississippi River steamboat was about one hundred feet long. It had two decks. The paddle wheels were on the side. Two smoke stacks were placed in the center of the boat side by side. The steering house was on the upper deck forward. The pilot steered the boat from this steering house and signaled the engineer with a bell. The engine-room was in the middle of the boat on the lower deck. The steamboat sent out a cloud of smoke from both stacks.

The child can illustrate paragraphs similar to this with quite a high degree of ingenuity. It is an excellent practice in accurate comprehension. The drawing should be checked on the accuracy with which the objects mentioned are suggested rather than on the beauty of the drawing.

14. *Training in writing.* Language, reading, and writing are all bound up in the processes of study. Writing a simple paragraph of prose correctly should now be possible. Children can compose a few logical sentences about how to make something, or give a simple narration. This writing should be closely linked with useful activities in study situations and not be regarded merely as a formal exercise. Spelling, sentence form, and punctuation will be taught as a part of the regular language instruction in the grade. It is important frequently to relate this writing to the reading of books for study purposes.

15. *Rapid-reading exercises showing the result of concentration.* Give the child rapid-reading exercises, which have a time limit. Show by decreasing the time limit that concentrated attention will enable a person to read much faster and more accurately than he normally does. Show that it is possible to do much more work in a short time by rapid intensive reading than by loitering at the task.

16. *Check on reading skills.* The use of standardized and informal tests for checking up on reading skills is strongly advocated as a means of obtaining accurate ideas in regard to speed and comprehension of a given class and of individuals in the class. The teacher can

not know whether conditions are satisfactory or not until some standard is available with which to compare the achievement of the class and of the individual. Well known standardized reading tests are to be obtained from the World Book Company, Yonkers, New York, from the Public School Publishing Company, Bloomington, Illinois, from Teachers College, Columbia University, New York, and elsewhere. Teachers should send for catalogs of tests and choose those tests appropriate to their grade. Such tests give norms with which the reading achievement of the class may be checked. Diagnostic and remedial work following such tests is much more effective than teaching based upon personal observation alone. The teacher may, however, make her own tests of reading based upon material in the textbooks in geography, history, and nature study; or, better still, upon material in similar books which children have not read. Such tests may take the form of short response questions, completion exercises, directions to follow, true-false exercises, drawing exercises, etc. These tests should be scored by points rather than by per cents and the children's scores should be arranged in a table in order that they may be studied to determine which children are deficient, in what respects they are deficient, and what kind of training should be given next. An excellent discussion of both formal and informal tests is given by Miss Laura Zirbes in the *Twenty-fourth Yearbook*, Part I, Chapter IX. Ruch has also written a very helpful book on informal tests.[1]

[1] Ruch, G. M. *The Improvement of the Written Examination.* Scott. Chicago, 1924.

Habits to be formed. — The habits in reading and study outlined as desirable for adequate work with books should now take on definite character and form. Children should be interested in reading for study. Rapid, extensive reading should be habitual among the majority of the children if the program has succeeded. The mechanics of reading should be no longer a vexing problem. Concentration on a given problem or task should be marked. The child should show increased efficiency in using books, taking notes, and reproducing thought accurately. His chief development in grade four, beyond that in grade three, should consist of increased efficiency and maturity with which he does these things. He should have developed by the end of his course in this grade a disposition to ask questions about the things he reads, supplement the class discussions from experience, and to read newspapers, magazines, and books for information as well as pleasure. It is most desirable that a certain initiative in these matters should have been developed.

FIFTH GRADE

When grade five is reached there is very little doubt that the child should have definitely discarded to a large extent his habit of dependence upon the teacher, that he should read material within the range of his vocabulary readily, and that he should steadily accumulate helpful information. Moreover, he should display ability to think for himself. The program in reading and study may be rapidly developed in this and the following grade. The reports of children on

what they do when they study show a rather striking similarity in the list of activities in this grade to those in grades seven and eight. There is, therefore, little danger in attempting to encourage a certain amount of self-analysis and to interest the child in his own study processes.

Attitudes toward study. — The outline of objectives presented in Chapter XII will show that the major attitudes have already been initiated in the preceding grades. In this grade and in the following, it is particularly necessary to make the school fit the needs of the child and to see that he is employed in happy, useful tasks, as well as in interesting and satisfying play, if he is to preserve the attitude that study and books are an important element in his life. Distractions of all sorts are now being met. Athletic contests, social engagements, the movies, free reading for recreatory purposes of books of doubtful value, and natural quickening of interest in the world and in other children may cause the breaking down of attitudes already carefully built up and turn the child away from serious books and study as dull and deadly things. The program of the preceding grades has carefully fostered such attitudes as seem desirable. It is more than ever important that children should now be given worthwhile tasks. Geography, history, science, and many other fascinating subjects offer a challenge to his permanent interests, if properly presented. While abundant effort must be given to the establishment of fundamental skills and knowledges, arithmetic, geography, and history, as such, must not be allowed to assume a

greater importance than the child's mental development and the acquisition of right attitudes and interests. Interesting projects, group discussions, programs, and worth-while constructive activities are of crucial importance in preserving right attitudes toward work. In addition, direct attention to the individual child and his difficulties and successes in study is suggested in order that he may not be lost in the mass. Children of this age are very impressionable and will respond in a large measure to the high ideals of the teacher. Abundant opportunity for activity, attention to individual needs, and high standards of attainment will help to keep them interested and active in various forms of useful school work. Books and study can be made to assume a very large place in their lives and in their plans for the future. Individual conferences with children about their failures and successes are advised.

Knowledges about study. — The only additional knowledges added to those discussed in grade four are found in the introduction of the statistical abstract, such as the *World Almanac*, the development of additional principles of study, the teaching of the need for a specific purpose in study, and emphasis upon the value of outlining and summarizing as aids. These additional items will be discussed fully, but no added treatment is given to the knowledges mentioned in grade four; they are simply to be more fully developed and extended as shown in the outline in Chapter XII.

1. *Use of statistical abstract.* The teacher will use the statistical abstract as a means of obtaining the most recent data on geographical topics. She may, if

her pupils are sufficiently advanced, introduce this book to the children and explain its value. Children may then be referred to it and shown how to use it in their study of geographical problems. The *World Almanac*[1] is a reliable source of information of this type. It can be consulted by the teacher to show children that geographical statistics change from year to year. The progressive teacher will wish to keep her statistical information up to date. By the sixth year, children can learn how to locate information in this source book and others and how to use it intelligently. The use of up-to-date figures on production of crops, manufactures, imports, exports, etc., will illustrate to the child that geographical information is constantly changing.

2. *Methods of study.* The few rules suggested below are simple principles of procedure that every child ought to know. The principles can be developed through discussion and the rules formulated by the children. The teacher may then observe the children to see if the principles are followed, and encourage their observance. The principles suggested for grade four should be extended as follows:

a. Do not memorize all the material in an article. Pick out the most important points and memorize them.

b. Do not memorize a rule or principle before you understand it.

c. Ask your teacher just what facts you are to memorize — what dates in history, etc.

d. Practice memorizing short poems or prose selections by the whole method; that is, by reading straight through from beginning to end.

e. If you wish to remember anything a long time, practice saying it every day for ten or fifteen minutes at a time.

[1] Published annually by the *World*, New York.

f. Stop once in a while and think over what you have studied and try to give it in your own words without looking at the book.

g. When you can't remember, at once, a thing that you want to remember, come back to it again later and you may get it then.

h. A great help to you in recalling facts is your own desire to remember. Don't give up at once when things don't come back to you.

3. *Need for a specific purpose in study.* — The course as outlined has implied specific purposes in study throughout. The child may now be shown how much easier it is to get a lesson when he has a definite purpose than when no purpose is present. Assignments of two different types may be made: (1) a general assignment with only a single problem and a general reference to several pages, and (2) an assignment in which specific problems are set and specific page references are given. Results may be measured and the greater ease of the specific assignment may be noted. Examples follow:

An Example of a General Assignment with No Specific Problem

To-morrow we will read about Daniel Boone, the Kentucky Pathfinder, in Chapter VIII of the textbook. Come prepared to discuss the first seven pages down to "Kentucky," on page 125.

The Same Material, but with Specific Problems

How many of you have heard of Daniel Boone? About what time did he live? What kind of man was he — a sailor, merchant? Do you remember ever having heard about the pioneers who crossed the wilderness toward the west after the Revolutionary War? Did any of your people pioneer? What shall we find out about Daniel Boone?

[Writes on blackboard at suggestion of children]

Who was he?
Where did he live?

What kind of man was he?
What did he do?
What reason is there for us to study his life?

With these questions in mind, read the life of Daniel Boone, and be able to answer the questions to-morrow. Try to see how many facts about Daniel Boone and his life you can supply in addition to answering the questions.

4. *The value of outlines and summarizing in study.* The child has already been taught to outline and summarize. The utility of these methods may now be shown by giving an assignment in which the children merely reread material; then one in which they outline and summarize. The results can be noted and the child encouraged to summarize on his own initiative at the end of each lesson where this is desirable. The summary may consist of a series of statements or of a paragraph of simple sentences. It need not be extensive at this time; but should be a simple statement of the main points. Give the child suggestions somewhat as follows:

Read this lesson carefully. At the end of the first paragraph stop and ask yourself, "What is the most important thought here?" Then write down on a sheet of paper a statement of that thought. Do the same with the second, third, and remaining paragraphs. Now, at the end, look at your paper and read it over carefully. You will find that you have a summary of the main points in the article.

It should be noted that such deliberate careful work should be done only with material so important as to require mastery. Story material is not suited for this type of work; rather choose informational selections of some value to the child.

The purpose of the last two suggestions is to begin to awaken in the child some knowledge of effective and noneffective methods of study. Certain children are now ready to begin to analyze their own methods of work. Specific, direct instruction in methods of study, the calling of attention to good and bad ways of doing things, should make children conscious that there are good and bad ways to study. Such instruction paves the way for that later self-analysis by the child of his study processes advocated by Lyman[1] and others for junior high school pupils.

Skills to be developed. — 1. *Specific training in three types of reading.* The child has already been initiated into the reading of factual material for specific purposes. The fifth grade also offers abundant opportunity for continued development of rate, comprehension, organization, and retention by specific training exercises. Work reading, or informational reading, should occupy a large share of the time allotment. Reading for appreciation may be generally regarded as allied to, and indeed, generally identical with, reading for pleasure. Appreciation for certain types of material, however, must be developed. Hence, the reading of materials by the teacher which the child cannot read readily for himself may be a part of the reading program. The rapid and extensive reading of many good recreatory books must also be encouraged. Interest in out-of-school reading must be maintained and developed. Detailed suggestions in regard to the skills in informa-

[1] *Op. cit.*

tional reading to be further developed are included in the following discussion.

2. *Drills in accurate reproduction of factual material.* Continued attention must be given to accurate reporting of factual material in connection with content subjects. Children must be given specific drills in reproducing, accurately and effectively, facts in geography, history, science, and other subjects. The emphasis should continue in these exercises to be upon simple reproduction. Rigid adherence to the facts should be insisted upon. The teacher should throw responsibility upon the class for judging the accuracy of the statements of the child who is reporting. An example of a good technique follows:

Teacher. John, you may tell us what you have found about the Roosevelt dam.

John. The Roosevelt dam is a great dam in Arizona. It is on the — I don't know what river. The water is used for — for irrigation.

Teacher. Children, are you satisfied with John's report?

Mary. I think John should give us more facts about the dam.

Teacher. You may try again, John.

John. I don't know any more.

Teacher. Mary, you may tell us what you think ought to be said about the dam.

Mary. The Roosevelt dam is on the Salt River, near Phoenix, Arizona. It is very high and wide enough for a road on top. The water of the Salt River is used to irrigate the Salt River Valley. They raise cotton there. It is used for making automobile tires, because it makes long threads.

Teacher. Was Mary's report any better than John's?

Helen. Yes, I think it was better.

Teacher. In what way? John, can you tell us?

John. Yes, I think it was better. She knew what river the dam is on. She knew more things than I did.

Teacher. Well, John, to-morrow you may report again on the Roosevelt dam. I'll give you a book that tells some interesting things about it. Let's see what a good report you can give.

The children here are being trained in the importance of accurate reporting. The necessity for accurate reporting leads to careful reading and improves the ability to remember important points.

3. *Skimming exercises.* Children should be taught to skim books rapidly to find answers to problems, or to locate new material which throws additional light upon problems already under discussion. These drills may encourage greater rapidity than in grade four. The teacher may tell children what skimming is, how it is used, and encourage the development of the ability by proper exercises. Skimming to find a word, phrase, or sentence, title, or table can be developed in this grade. Emphasis upon the successful completion of the exercise should always be first in importance. Exercises in skimming to locate material in geography take the following forms:

a. Skimming to locate the name of a place.
b. Skimming to find a particular statement.
c. Skimming to get the gist of the article.
d. Skimming to find whether or not there are any new facts.

An example of suitable direction follows:

Open your books to page 209. Put your finger on the place. I want you to read the next section to see if there is anything new in it that adds to what we already know. Skim the material rapidly. When you come to a new statement, put your finger on it and wait until I check you to see if you are right.

4. *Index drills.* Index drills in connection with problem study in geography and history may be perfected in this grade by further exercise. An occasional drill to see how rapidly and accurately material can be located should be given. This specific drill should make children use indexes quite readily in looking up material. Much more speed and accuracy should be shown than in grade four where the beginnings of actual training in effective finding of material were made. Children may be asked, after they have had some training, to look up all that the book gives on a particular topic and then to set down in brief form what they have found. This is an exercise in selection of material as well as in use of the index.

5. *Training in outlining.* The outline in grade five becomes more complete than in preceding grades. Whereas only a rough outline was taught in grade three, and only the simple form of the outline in grade four, such as the following:

I

1.

2.

II

1.

2.

in grade five the outline may take the form of

I

1.

a.

b.

2.
a.
b.

II

1.
a.
b.

2.
a.
b.

The child is thus gradually taught to develop a fuller and more accurate outline. This outline may be taught in connection with the careful reading of important material. The successful completion of an outline gives excellent training in comprehending and organizing the material read.

6. *Talking from an outline.* Children who have been trained to talk from an outline should now develop independence in its use. They may be taught to memorize the main headings and then to depend upon a review immediately before presenting the outline to give them readiness. Emphasis can be directed to the greater effectiveness of presentation when a speaker can look his audience in the eye. Such reproductions from an outline which has been committed to memory should be motivated by the presence of an adequate audience in classroom or auditorium.

7. *Keeping a notebook.* The child has already had two years of experience in some form of notebook keeping. The notebook has become a repository of materials resulting from the study of interesting problems.

In the third grade it was a simple record of materials largely dictated by the teacher. In the fourth grade outlines of topics more detailed in character were introduced. In this grade, the teacher may well introduce the writing of summaries of material read, more formal outlines, and the recording of the child's questions. His personal observations should be recorded. The form of the notebook may now be emphasized. A title page, table of contents, and page index may be made and the contents carefully arranged under the proper headings.

8. *Extensive reading in preparation for reporting.* The importance of reading and thinking before attempting to discuss any topic should be emphasized. The child may be shown how much more readily he can talk after he has read extensively. Exercises in extensive reading and reporting may be given. This may be done as a means of making more effective formal reports, such as those suggested under 7.

Directions for Reading Extensively in Preparation for a Report

Before you try to prepare a talk on this topic, run rapidly through the list of references given on the blackboard. Note to what topic each reference relates. Do not decide until you have read all the sections referred to which you are going to use. Then when you have finished reading them all, pick out the best ones for your purpose and reread them, keeping in mind as you read what you want to use. When you have finished, jot down on a paper the main points of what you are going to say.

9. *The handling of books.* Continued care in the handling of books should be encouraged. The repairing of torn pages, as has been suggested earlier, should be a periodic class exercise. The mending of a loose

cover for temporary use may also be taught. Rebinding a book is not an impossible task for a child of this grade if proper facilities are at hand.

10. *Oral and written summarizing.* Continued attention to effective oral and written summarizing should be given. These summaries should be real summaries and not mere reproductions practically in verbatim form. The habit of summarizing is built up through practice in it. Short paragraph summaries of problems discussed, articles read, and events and processes observed, should follow discussion lessons, and written summaries should then be put into the notebooks. An example follows:

A Notebook Summary

Daniel Boone was an American pioneer. He was born in 1724, not far from Reading, Pennsylvania. His father was a Quaker named Squire Boone. His mother was Sarah Morgan. Daniel Boone was a great hunter and woodsman. When not hunting, he was a farmer, weaver, or blacksmith. Daniel Boone fought in the French and Indian War. At first, Boone lived in North Carolina and Virginia. In 1769, he started west with a party to explore and hunt.

As the study of Boone's life progresses, additional summaries should be made to record the important events. The summary helps to clinch the important facts and serves as a means of teaching the child to record facts accurately.

11. *Reviewing.* Teach the child how to review material he has gone over once. Give definite directions for review. Teach him how to take his book and review important topics by asking himself questions, by

finding the main points, by reproducing accurately, and by summarizing. Teach the importance of review before a test and give opportunity for developing the habit of reviewing.

12. *Asking questions of material read.* A number of writers have advocated exercises in asking questions of the material read. Experience in teaching children in elementary grades has convinced the writer that this can be done as low as grade two. In this grade the child may be taught to record systematically the questions that occur to him as he reads and thus to keep a continuously thoughtful attitude toward his reading. These questions will give the teacher many cues as to the child's power to read and think and will insure the development of that personal reaction to printed material which is a characteristic of a thoughtful reader. Training in the asking and answering of questions before the class will also be excellent practice for these children. The teacher should pay attention to the character of questions and replies and point out good and bad points. This training is excellent preparation for effective independent study.

13. *Finding specific purposes and problems.* Children have already been trained to find answers to problems raised by the teacher. They may now be further trained to find some purposes and problems of their own. This training is important in study as pointed out by McMurry[1] and others. The teacher may give the class an occasional exercise in which material is presented on some subject children have been studying.

[1] McMurry, F. M. *How to Study.* Chapter II.

The class may then discuss what they might expect or like to find in the material. They may then read to see whether or not the material contains the desired information. In other instances, the pupils may formulate purposes independently and study with those purposes in mind.

14. *Vocabulary drills.* While it is true that vocabulary is most rapidly accumulated through broad experience in reading, certain exercises dealing with vocabulary should be developed. The study of prefixes, suffixes, synonyms, antonyms, and homonyms may be continued. The diacritical marks in the dictionary should be used for help in pronouncing unusual words. Such devices as the classification exercise, opposite drill, and certain word-completion exercises[1] are also good for development of vocabulary. Occasional vocabulary tests of a formal or informal type should also be used as a means of estimating how rapidly word knowledge is accumulating. The value of words as used in life should also be considered. Thorndike's *Teacher's Word Book*[2] should be in the hands of every teacher as a means of determining the relative importance of words. Words high in importance should be studied rather than words only occasionally found in the reading material used by the child. Formal vocabulary study should never take the place of reading.

[1] *See* Stone, *Silent and Oral Reading.* Chapter VIII. *Twenty-fourth Yearbook,* Part I, Chapter IV.

[2] Thorndike, E. L. *The Teacher's Word Book,* Teachers College, New York, 1921. This is a compilation of the 10,000 most commonly used words in English reading, arranged in order of frequency of use.

15. *Exercises in extensive reading for vocabulary development.* The accumulation of vocabulary through extensive reading is one of the constant means of increasing word knowledge. The child should not be conscious of this purpose, necessarily, and, in fact, other purposes, such as have been indicated from time to time should motivate his work. He may be taught, however, to note unusual words and to write such words in his notebook together with the sentence in which they occur. The meaning may then be developed by discussion or the word may be looked up in the dictionary.

16. *Emphasis upon accurate comprehension.* Accurate comprehension is developed by specific exercises. Continued drill in certain exercises useful in reading and study situations should be a part of the formal instruction in reading skills in all elementary grades. The particular exercises suggested for this grade are continuations of exercises mentioned for lower grades except that they are somewhat more advanced in character. Children may now be given a definite assignment consisting of a set of questions of some complexity and told to read and find the answers to them. They may be given completion, true-false, or other objective tests to perform in connection with their preparation of lessons in history, geography, and other content subjects. They may be asked to draw diagrams and illustrations showing their complete understanding of what they read. They are now advanced enough to be given an assignment to supplement the thought of the material they have read by adding

an illustration, additional information, or asking a question about some phase of the subject which has not been covered. Accurate memory tests on facts previously studied should be given occasionally to emphasize retention of minimum essentials. All these exercises emphasize skills essential in study. Examples follow.

Exercises for Development of Accurate Comprehension

(Reading to Answer Questions)

Read the section in your textbook on cotton and answer the following questions:

1. Why is cotton grown in the South and not in the North?
2. What is the cotton belt?
3. How is cotton planted?
4. How is it cultivated?
5. When cotton is picked, what is then done with it?

(Completion Exercise)

Read the section on cotton and then complete these statements:

1. Cotton is an —— plant to raise.
2. The cotton —— of the United States is the producer of cotton.
3. Cotton needs a —— season for growing.
4. The western line of the cotton belt is a —— line.
5. Cotton is planted in ——.
6. It is cultivated by —— drawn by ——.
7. Everybody on the plantation —— the cotton.
8. Cotton is picked from —— until cold weather.

(True-False Exercise)

1. Cotton is a difficult plant to raise.	True	False
2. The cotton belt is determined by climate.	True	False
3. Cotton cannot grow in the west because of lack of moisture there.	True	False
4. Cotton is planted in April and May.	True	False
5. Cotton is cultivated mainly by hoeing.	True	False

(Drawing Exercise)

Read the section in your textbook on the production of cotton and then illustrate the text by drawing the following:

1. A picture of a cotton boll.
2. A sketch of a cotton plant.
3. A diagram of a cotton gin.

(Supplementing the Thought)

Read the section in your textbook on the production of cotton. Then recall what you know that this text doesn't give. Set down any additional facts you know.

1.
2.
3.
4.
5.

(Raising Questions)

As you read the selection in your textbook on the growing of cotton, set down on your paper any questions that arise in your mind on the subject. Bring these questions to class. You will be assigned additional material to help you find answers to them.

1.
2.
3.
4.
5.

These suggestive exercises may be written on the blackboard or they may be hectographed, or mimeographed. They have several purposes, among which are motivating the study, emphasizing accurate comprehension, training in specific skills needed in study, and exercising the judgment of the pupils.

Habits to be formed. — At the risk of seeming needlessly repetitious, the writer will discuss the habits to be formed in grade five in a similar manner to that used in considering this problem earlier in the book.

Habits are formed by constant practice. Bad habits are perhaps more easily formed than good ones. Some habits are easily formed and some require effort. Habits of study come to adults through motivated repetition and conscious effort; they should come much more easily and unconsciously to children, perhaps, but not unless the teacher is conscious of what habits she wishes to have formed and plans consciously for their development. The course of training suggested for grade four should have helped to perfect these habits.

Fifth-grade children should exhibit habitually an ability to read rapidly and efficiently, discuss problems intelligently, use outlines and summaries, report on materials read, and should enjoy such useful and interesting work in a measure formerly expected only of more advanced students. Speed of reading and accuracy in comprehension should have made a distinct advance. Factual material should be read very efficiently for many different purposes. These children should use reference books habitually without the teacher's making the use of them compulsory. They should make neat records and use these records skillfully in discussion. Above everything else, perhaps, they should show distinct ability to think independently, should supplement the discussion frequently from reading and observation, and should show a

marked ability to evaluate the materials with which they deal. They should have opinions on both factual and recreatory books. They should exhibit the questioning attitude of mind. They should constantly want to know and be in the pursuit of further knowledge. They should, moreover, be accurate in the fundamental tools of reading and should not be embarrassed in the gaining of a wide experience by the handicaps of faulty word knowledge, lack of ability to attack new materials, and lack of skill in using specific skills in a variety of reading situations. Fundamental attitudes, knowledge, and skills, should function habitually with few relapses.

SIXTH GRADE

In the sixth, the last of the elementary grades in school systems organized according to the 6–3–3 plan, the child must perfect the fundamental attitudes, knowledges, skills, and habits of reading and study. In the next grade he will enter upon a period of rapid extension of knowledge, of more extensive treatment of materials of all sorts. Moreover, a smaller amount of direct training will be given to fundamental skills and habits; and if such habits and skills are not present, the child will fail to realize the full benefit of his opportunities. It is most essential that the sixth-grade teacher give special attention to the individual, in order to detect the absence of fundamental skills and habits and remedy the condition before it is too late.

It is true, also, that many of the children who reach this stage of their education will get no more formal

education. Hence, the importance of the perfection of the program of reading and study as outlined in these later chapters.

The program for grade six adds few new attitudes, knowledges, skills, or habits to those already outlined. A more extensive development of certain of them is suggested. By the end of the period the child has had a training in all the major activities of reading and study. Further refinement of these activities must be left to the junior and senior high schools. But if this much can be done with even partial success, the secondary school will have far less reason to criticize the elementary school for inefficient work done than ever before.

Attitudes toward study. — 1. *Individual conferences.* The individual conferences suggested for grade five in Chapter XII should be continued and their nature should become more complex as the child develops. The reason for his failure to get certain results, better ways of studying, and the relation of success in study to his success in life may be the subject of a series of conferences. Attitudes of interest in study, responsibility for it, and desire to succeed in it, can be now encouraged through direct personal contact. The teacher should aim to analyze each individual child, find out what his possibilities are, and attempt by positive means to encourage the development of his particular powers. This personal interest on the part of the teacher will do much to preserve that confidence that the child has previously had in the school. A lack of attention to the individual — losing him in mass

instruction — will result in the failure of many to continue their interest in school and in education as a means of helping them solve life's problems.

2. *Influences of approaching adolescence.* There is another reason for personal attention to the individual at this period. Many children become adolescents during this year. They have increasing interest in social activities, and the distractions of the adolescent period must not be allowed to break down those carefully nurtured habits of thinking and acting which have been built up so laboriously. Attitudes of the right sort toward work must be maintained through every direct and indirect means. Faithfulness in study must not give place to the irresponsible, shirking attitude often found among children in the upper grades and early high school period. On the other hand, the adolescent period opens up great opportunities to the teacher, for the child often takes an added interest in reading and is very susceptible to the influences of high ideals, to hero-worship, and to strong enthusiasms and antipathies. He is diffident and ashamed of the new powers that are awakening in him. He needs a friend, but he is difficult to approach and his confidence is hard to capture. He is often critical of the things that the school requires, but group loyalty is strong in him and the social instinct is rapidly developing. For these reasons, he may be encouraged to emulate the very highest ideals that the teacher can set up. It is wise to present these and let them speak for themselves. Supply books, suggest new ones, hold up high accomplishment as admirable, be friendly and sympathetic,

but do not be dogmatic and do not preach. Encourage group work; make much use of worth while social projects; make success attainable in the study tasks of the school and the result will be a quality of work and an interest in books and study far in excess of that which is attained under more perfunctory methods.

3. *Encourage responsibility.* The child is now able to accept responsibility to a sometimes surprising degree. Much work should be done by committees of children. Individual children should be given special assignments that require observation, reading, and thinking. Reports of committees and individual reports should be considered serious affairs. The group will hold the individual responsible for accurate work and for worth while results if the teacher will throw responsibility upon it.

The child's hobbies are an excellent aid to the development of a responsible attitude. Scouting, campfire work, radio, clubs, and other interests should be utilized to help the child take an interest in books and study. The use of books for informational purposes naturally accompanies many of these activities. If the teacher will take part by encouraging children to discuss these subjects in the school, showing an attitude of interest and appreciation, much will be done for the school as an institution and for the teacher as a representative of the school, as well as for the child's permanent interests in reading and study activities. Many boys have been led to permanent life interests in science and nature study as well as in literature and other subjects

through the scouting experiences begun at the age of twelve. Many teachers and principals have improved their professional worth through sympathy and enthusiasm for these activities.

Responsibility develops through exercise just as any other trait. The teacher must utilize the children's own standards of responsibility — for they have them — rather than impose her own arbitrarily upon them. It has often been remarked that children are sometimes even more critical of each other than adults are critical of them. The important thing is to get this criticism turned upon failure to play the game in school as well as outside the school. Children can be made proud of a good report by proper group approval, or they may be allowed to waste time and condone irresponsibility through some feeling that the teacher is unsympathetic or that a required activity is worthless. This can be avoided by the teacher who is conscious of the problem.

4. *Guard against the irrelevant.* Many influences seem opposed to the teaching of the school that books and study are worth while. The teacher must particularly guard against these influences. Interest in making money, in athletic contests, and the like, must reenforce and not detract from the activities of the school. Particular care must be taken to counteract the bad use of these agencies. Outside interests must be utilized by the school for their educational values; and on the other hand, care must be taken to show how the school activities and subjects enrich the outside activities.

5. *Pre-vocational training.* Although the pre-vocational training of the junior high school may seem too advanced for children in grade six, it must be remembered that many children in these grades overlap the average junior high school child in maturity of development. The child of this period who shows a particular bent should be encouraged to develop it. Appropriate reading matter on vocational subjects should be included in the outside reading of the grade. Children who have particular talents should be encouraged to exercise these talents in connection with their varied social and industrial studies. Attention to and encouragement of the tendencies which lead to vocations later may save to the school many children who otherwise would be lost. Certainly much can be done through attention to the right kind of reading.

6. *Increase individual responsibility to the group.* The child who gives a report or who has been delegated a certain task to perform should be made to feel his responsibility to the group rather than to the teacher. Group, or social consciousness should be encouraged. A child should feel ashamed to fail to make a report when assigned one, to fail to take part in a discussion, or otherwise do his share. This attitude is important in future work of all sorts. It should be developed as early as possible.

7. *Utilize school assemblies.* Children should be increasingly responsible for school assemblies. Their classroom work may be so planned as to directly prepare them for interesting programs based upon reading, observation, and constructive activities. These school

assemblies strongly motivate good work and encourage the work spirit. When children themselves largely plan and carry out the activities, the educational results are, naturally, superior.

8. *Encourage right attitudes through biography.* Children are hero-worshippers. They may be encouraged to do good work in study if furnished with the proper models. Elsewhere in this course the influence of such models has been brought to bear. Now children may be encouraged to read for themselves interesting biographies, such as Wade's *Real Americans*, Baldwin's *American Hero Stories*, Moran's *Makers of History*, and other longer stories. Roosevelt's *Letters to His Children*, although not strictly biographical, gives interesting sidelights on character. More good simple biographies are needed than are now available. Children often decide upon their life ideals by this time. Some unconscious influence brought through books may fire an ambition in the child by setting up an ideal character to be imitated.

9. *Discussions of study problems.* Children in this year can analyze quite remarkably the processes that they carry on in study. Some direct attention to their failures, successes, and problems, will help to create attitudes of interest in study and its products. This is most desirable. Too adult-like an attitude here should be guarded against, but children can make a list of things they do in studying and discuss the advantages and disadvantages of doing these.

10. *Make activity socially useful.* Every activity possible in this grade should be made socially desirable

as suggested in discussion of point 1 under this heading. The importance of keeping children doing worth while, interesting things in preserving right work attitudes need not be urged further.

11. *Answer child's questions honestly.* Give the child a straightforward answer to his questions about study activities. If he can't see their usefulness, the teacher should persevere until she succeeds in making them appear worth while. If she cannot justify the subject to the child, there is possibly something wrong either with the subject or the teacher's manner of teaching it. Children often lose interest in school activities at this time because they cannot see the use of them.

Knowledges about study. — 1. *Continue to act as an introducer of books.* In this grade the child is able to read widely and voraciously. The teacher must be on the watch to see that he does not select bad or worthless books. Interesting factual books must be thrown in his way. The teacher should find out what the child is interested in and then find books that will help him with his interests. The librarian, if there is one, must be encouraged to emphasize books of fact as well as books of fiction. Constant use of these must be made in study. Children must know them in order to use them and the teacher is the best person to make them known. The library is ordinarily better able to meet the needs of the child for recreational reading than for informational reading of the study type. However, there are many books which are both informational and recreatory that may be utilized for study purposes. And while lists for this grade may be lean, many books

which are ordinarily listed as suitable for the upper grades can be utilized here for interesting the more developed children in the work type of reading. Burroughs's *Squirrels and Other Fur-bearers* will greatly interest a child who likes nature and hunting; Hall's *Boy Craftsman*, the Boy Scout *Manual*, Adams's *Electricity for Boys*, Forman's *Stories of Useful Inventions*, and Nida's *Following the Frontier* will offer the opportunity for keeping the boy busy with useful reading. Other books, such as Bishop and Keller's *Industry and Trade* and Smith's *The World's Food Resources*, can be used to supplement the class exercises in geography and to develop the children's interest in use of informational books. Biography and travel should be introduced as a necessary aid to the study of history and geography, as a means of creating attitudes of a permanent sort toward worth while achievements in the world, and as a means of developing permanent interests in useful things. Faris's *Real Stories of the Geography Makers*, Roosevelt and Lodge's *Hero Tales from American History*, Parkman's *The Oregon Trail*, and Meeker's *Ox Days on the Oregon Trail* can be used for these purposes.

The peculiar reading tastes of girls are more difficult to serve than those of boys at this age, although girls do and will read many books that boys read and are not so different in their likes as was formerly believed. Better books for girls are urgently needed for this and later periods, but they seem to be curiously lacking from the book lists now available. Doubtless the new developments in the status of woman and her tendency

to go into different professions and occupations, will bring forth for girls books which meet her needs as well as some of the better boys' books do for them.

The teacher as a guide to books will be particularly careful not to arouse the antipathies of children by openly and scathingly denouncing certain of the more popular stories, or series of stories, even though these may be poor in structure and perhaps unreal and oversentimental in their appeal. The writer knows from experience that such disapproval does little good. The better plan is substitution of a better book for a less worthy one. Children will read extensively at this period. It is the teacher's duty to keep them as well supplied as circumstances will permit. The teacher and the librarian should be the closest of allies in the matter of planning reading lists and putting the best of books into the hands of children.

2. *Plan to use reference books.* The teachers of preceding grades have already introduced reference books. Continue to use them in the content subjects. Show children how to use them and show appreciation of their value. Give the children such information about these books as they can absorb.

3. *Physical conditions.* Continue to relate good physical conditions to success in study. Show how much better a child can work under the proper conditions. Emphasize the importance of general good physical health in mental work as well as in physical work and play. Let the children take charge of the ventilation, heating, and lighting of the classroom. They will learn the importance of good conditions best

by having a part in making the room healthful. General principles must be translated into experiences before they have much meaning to children. Physical conditions may be very bad while much lip knowledge of correct principles can be glibly aired for the benefit of those who believe chiefly in knowledge as the thing which influences correct practice. Both knowledge of good conditions and practice in arranging for them are essential.

The writer once saw a group of children in the fourth grade make a health survey of their classroom, determine the lighting area, the amount of ventilation available, whether or not the cleaning was correctly done, and the efficiency of other sanitary arrangements. Their report showed that the room needed many changes in order to meet their standards. They then embarked upon a project to make it as satisfactory as possible. They realized as never before what health conditions mean. Such an idea could be used to relate the child's results in study to his health habits and his physical surroundings.

4. *Develop additional principles of study.* There is no reason why principles of study should not be as definitely known as principles of health, geography, or science. A few of these have been introduced in earlier grades. In this grade additional principles of a simple character are suggested. When these are taught the child will have largely mastered the rules set forth by Whipple in his monograph, *How to Study Effectively.*[1] These rules are as follows:

[1] Public School Publishing Co., 1916.

a. Don't worry.[1] This rule is in need of constant attention. Children, as well as adults, worry over work that is going badly. The futility of worry should be taught. Children who worry should receive special individual attention and help from the teacher. The writer has known of children who worried incessantly about the work of the school — arithmetic, spelling, or some other subject. They knew they were failing, but they did not know what was the matter. The teacher should study such cases and, if possible, remove the cause for worry.

b. Take an attitude of attention. Children can learn through experience the force of this simple rule. Waiting until one "feels like it" is the enemy of accomplishment. Systematic work regardless of emotional tones must be encouraged.

c. Review previous work. This simple principle can be developed and its value demonstrated. Children will comprehend its significance easily. The knowledge of its significance is important as is its practice in a study situation.

d. Make a rapid preliminary survey. This practice can be taught as an exercise in reading and its value demonstrated. Select two articles of similar length and difficulty. Prepare two sets of questions of similar type and equal in number. Present one article by the method of preliminary survey and study of the important parts. Have children simply reread the other article. Give both tests and compare the results. The first method should produce superior results.

e. Judge value of material. That reading material is either of temporary or permanent worth and should be treated accordingly is a principle of great value in advanced study. Such a principle may be learned by children in grade six. In fact, it must be learned earlier or all material will appear of equal importance and much time be lost in needlessly learning material of relative worthlessness. The importance of making this evaluation must be stressed and specific drills in doing it should be given as regular instruction in developing reading and study skills.

f. Commit formulas and rules to memory. It is doubtful if many adult students realize the importance of this principle in study. Either memory work is indulged in indiscriminately and all material memorized alike, or else memorizing impor-

[1] See simpler statements of this principle and others under the same heading in Chapter XII.

tant laws, rules, and principles is neglected. At first the teacher should point out explicitly material to be memorized; and later, children should be taught to select such material for themselves. The learning of this principle will save much valuable time. It applies in content work in language, mathematics, science, geography, history, and health. Any principle should, of course, be thoroughly understood before it is committed to memory. And it is doubtless well to develop principles inductively with children in this grade before they are memorized.

g. *Review just before giving a report.* The importance of a last rapid review before a discussion, report, or recitation must be understood by children who study independently either at home or in school. If necessary, the value of the practice can be demonstrated. Children will learn then to use it through practice.

h. *Review frequently for permanent retention.* The importance of this principle will be easily understood by children of this age. The teacher will see that such reviews form a part of the regular program. There is no reason, however, why children in this grade should not understand the importance of the principle and apply it in their independent study.

i. *Commit oral material by oral methods.* Material to be reproduced orally is best memorized by oral reading. Oral reading of the material is better than silent reading because it is primarily an oral language exercise. This principle can be easily understood by children and put into practice in committing poems to memory in home study or in mastering other material which is to be recited.

j. *Study your own best methods.* Individuals differ in their ability to use well different methods of study. Probably no two good adult students use identically the same methods. Children in grade six can give an intelligent account of how they study a textbook lesson in geography or history. These accounts may then be studied for likenesses and differences. Where there is no evidence to show that the method used is an inefficient method, an individual method may be encouraged.

k. *Remember and apply rules you have learned.* This principle would seem obvious. It has value, however, and must be brought to the attention of children learning to study. It is particularly applicable to the study of arithmetic.

l. *Occasionally ask yourself about your study practices.* This rule is less easily applied by children in grade six than by older

children, but the beginnings of self-analysis of study processes may be encouraged here. Further development will follow in the higher grades.

5. *Continue to use plentifully pictures, charts, and graphs.* Children in grade six are easily taught by means of good charts, maps, and graphs. Newer textbooks in geography are making far greater use of such material — particularly graphs and tabular material — than formerly. The time-saving qualities of good graphs, charts, and tables should be emphasized and their use indicated. Observation of people, places, and things is also an excellent aid to study and a means of supplementing what is read.

6. *Continue to emphasize accurate written reports, outlining, and summarizing.* Written records are important aids to study. A good beginning has been suggested in the preceding grades. Good, accurate reports, summaries, outlines, etc., should be constantly used in the study of the sixth grade. The teacher should appreciate their values and impress these upon her pupils.

7. *Stress value of handwriting.* The mechanical accuracy and the legibility of written reports, notebooks, and other written records should be stressed as important in study. A few well-written reports, rather than hastily scrawled and careless reports done oftener, should be the aim. Much valuable material is lost by adult students through hasty and faulty recording.

Skills to be developed. — 1. *Continue to develop skills of Grade 5.* Few new skills are introduced in grade six, but there should be rapid perfection of those outlined

for the preceding grades. In fact the teacher of grade six should be thoroughly familiar with the outline for preceding grades and should aim to make good such deficiencies as appear.

2. *Require better use of the book index.* The child should be given references to sources of information in nature study, geography, or history, without the pages indicated, and should be required to find and list the page numbers. The use of the index has already been taught in earlier grades but it has been used principally under the teacher's direct guidance. Now it is suggested that a further step be taken to require the child to locate the information without the use of any help except the titles of certain books.

3. *Use of outline in oral reports.* The use of a written outline as a guide in oral reporting is now discontinued altogether except as a means of organizing the material. The child reports from memory without the use of notes when appearing before assembly or on a program. He has had training in previous grades which has gradually built up confidence in his powers. Careful preparation of an outline as a means of preparation should not, however, be discontinued.

4. *Continue to require extensive reading in preparation for reporting.* Assign children a topic, have them read extensively on it, and then report their material after having organized it in simple outline form. Stress the importance of reading widely as a means of giving fullness of ideas and readiness in speech.

5. *Develop notebook work.* The child should now use the notebook continually as a means of recording im-

portant outlines, summaries, etc. Further development of skill in notebook work may be attained by encouraging better outlines, better summaries, and better general organization of notes. Too many college notebooks are mere hodgepodges of scraps. Training in the use of a notebook, beginning early and continuing for a period of years, will do away with the inefficiency of notebook work in high school and college.

6. *Use and care of books.* The proper use and care of books has already been taught for several years. Careless habits should be checked by the teacher of this grade, and any points needing attention should receive it. Certain refinements in use of personal books may well be taught. Reports show that college students underline important words, make marginal notes, and otherwise give personality to their books in study. Elementary school children are not allowed to do this because the books are, as a rule, public property. In this grade, however, the use of books for reference purposes in preparing a report and the care of books in general may be reviewed. This will serve to remind the child of points he has already learned.

7. *Catalog, card index, and other aids.* Children are now old enough to use the library for reference purposes. Lessons in the use of the card index should be continued. The elementary school is rapidly changing into a library school, particularly in our larger centers, and even if children do not have an extensive library at school, most towns have a library which can be consulted for reference purposes. A good book of information on this and kindred matters for the

teachers' use is Ward's *Practical Use of Books and Libraries*.[1]

8. *Continue drill in oral and written summary.* The perfection of skills used in oral and written summarizing comes through unremitting attention. Summaries should grow in completeness and in length in this grade. Children should be given occasional tests of power to summarize in writing. The directed summary has already been much used. In the sixth grade children should gradually be freed from the necessity for always having a series of questions before them in summarizing and should give the gist of what they have read readily and accurately from memory. Such a summary is particularly necessary at the end of problem lessons and projects of any length.

9. *Continue vocabulary drills.* Word study and newer types of the classification exercises suggested in previous grades should be continued. The child should be interested in words. The word record in his notebook should receive frequent additions of new words he has met in his reading. He should be encouraged to use helpful words which he has learned incidentally. Words should be noted, compared, and classified in lessons occasionally devoted to this particular purpose. Careless use of words and indifference to them should yield to direct treatment. See the discussions under previous grades for suggestions as to how this may be done.

[1] Ward, G. A. *Practical Use of Books and Libraries.* (Revised and enlarged.) Faxon, 1926.

10. *Drills on rapid and accurate reading.* The perfection of specific skills in reading comes about through long practice in their use. The child has now had considerable practice in using reading in a variety of ways. He should readily read to find answers to questions and problems, read to get the gist of material, etc., as suggested in previous grades. A variety of such exercises may be used to give point and purpose to reading of content material. Perfection is gained in them through long practice. The particular addition to these skills suggested for grade six is skill in reference reading. A child is given a problem and required to find an answer to it from two or more sources, to digest what the sources say and give a clear report of their agreement or disagreement and of his judgment as to the best material. This is perhaps an advanced form of study as schools are generally organized, but it can be done by children who have had the previous training outlined in this book. The sources referred to must, of course, be within the child's mental grasp.

11. *Apply skills developed in the reading period to content subjects.* Such application of skills has been urged throughout the course. Only as skills are applied do they become automatic. The best method of developing ability in study is to make the logical application of skills of reading in their natural setting. Unless such application is constantly and carefully made, the program for making training in silent reading function in study will fall down.

12. *Continue exercises in rapid extensive reading of in-*

formational material. This supplements the careful training exercises in finding answers to specific problems and in using reference material. Children should read and give brief reports on informational books — travel, biography, science, nature study, etc.[1]

13. *Develop discussion and reporting skills.* Pupils in this grade should show some ability to discuss, report, and entertain others. This requires constant training in discussion. They should show a high regard for accuracy in reporting; a proper respect for others' opinions; a disposition to consult, at once, authorities upon doubtful points and to refrain from baseless contradiction and quarreling over disputed points. Reports should be accurate, clear, and as brief as is consistent with the full presentation of an idea. In listening to reports pupils should show respect for the reporter and should be ready to praise good work. At the same time they should be properly intolerant of laziness, lack of preparation, and wasting of time. These are not impossible ideals but are realized in a large measure as actual products of good training in this and previous grades in many schools to-day.

14. *Perfect recording skills.* Continue to emphasize accuracy and adequate speed in written work including notebooks, outlines, and reports. Good handwriting should not be neglected as an important skill in study situations. While perhaps not major in importance, it has its place.

15. *Encourage ability to think while standing.* Practice

[1] See bibliography in the *Twenty-fourth Yearbook*, Part I, Chapter VII, pp. 213–18.

in informal discussion growing out of problems and projects should occur often in this grade. Pupils should be trained to defend themselves when discussing a point and to think clearly without having previously prepared themselves directly to do so. These opportunities will often arise and should be utilized by the teacher to encourage good thinking.

16. *Expression in writing.* Expression of ideas in writing is one of the best means of clarifying thought. It is a great aid to study. Adult students constantly stress the value of writing and speaking as aids to development of clarity of thought. Children in this grade may be given opportunities to say in writing what they have tried to say orally. Written composition should be easily tied up with content subjects as well as with letter writing and more formal language study. Abundant suggestion as to proper subjects for such written reports is given in the chapter on "Language and Composition," in the *Fourth Yearbook* of the Department of Superintendence.

17. *Develop responsibility in group discussion.* The group discussions should be given over more and more to the pupils. Socialized lessons in which children preside, guide the discussion, and accept or reject contributions give excellent training in thinking and in group coöperation. Such occasions furnish for the child the same training as adults get in clubs, political meetings, and elsewhere. They give the natural setting for discussing the fruits of study, for investigating work with books, for thinking on a topic without previous preparation, and for gradual development of

independence in the pursuit and application of knowledge.

Habits to be formed. — It may seem to the reader that the foregoing outline has held up impossible ideals for the attainment of elementary school children. It may be acknowledged that such results will not be immediately obtained from children who have been brought up on the traditional textbook, memoriter method and in schools in which reading has been thought of in its mechanical aspects only and study has been generally left to incidental teaching, or totally neglected. These attitudes, knowledges, skills, and habits are not, however, impossible of attainment. They have already been attained in a large measure in certain schools.

The habits of reading and study set up for attainment at the end of the sixth year represent the final contribution of the elementary school to the permanent life habits of the individual. They represent what may be attained if a definite course of training similar to that outlined in the preceding chapters has been followed. These will not at once be realized in the case of children who have had inferior previous training, but can normally be attained in a course of years, in at least their major aspects, if a definite course of study is followed from year to year.

The reader should now turn to Chapter XII and read again the list of habits to be attained by the end of the sixth year. These are habits of thinking, feeling, and doing. If the child possesses them, he is already well equipped for reading and study in higher grades,

or, if need be, for life as a useful and intelligent citizen even though his formal education is soon cut off.

Materials. — Materials suitable for instructing children in informational reading are included in the following list which has been made up carefully by the same person who furnished a similar list for Chapter XIV. Some of the books are suitable for use in several grades.

Grade 4

HISTORY

Tappan. *American Hero Stories*	Houghton
Wells. *How the Present Came from the Past*	Macmillan
Blaisdell and Ball. *American History for Little Folks*	Little
Baldwin. *Fifty Famous Stories Retold*	American
Eggleston. *Stories of American Life and Adventure*	American

GEOGRAPHY AND TRAVEL

Aitchison and Uttley. *Across Seven Seas to Seven Continents*	Bobbs
Fairgrieve and Young. *The World*	Appleton
Mirick and Holmes. *Home Life around the World*	Houghton
Stefansson and Schwartz. *Northward Ho!*	Macmillan
Allen. *North America*	Ginn
Thomsen. *Bud and Bamboo*	Rand
Barrows and Parker. *Geography Journeys in Distant Lands*	Silver
Chamberlain. *How We Are Fed; How We Are Clothed; How We Are Sheltered; How We Travel*	Macmillan

SCIENCE

Craig. *Nature Study for Boys and Girls.* Book II	McIndoo Pub. Co.
Schwartz. *Grasshopper Green's Garden*	Little
Patch. *First Lessons in Nature Study*	Macmillan

Grade 5

HISTORY

Brigham. *From Trail to Railway through the Appalachians* — Ginn
Starr. *American Indians* — Heath
Faris. *Real Stories from History* — Ginn
Rocheleau. *Transportation* — Flanagan
McMurry. *Pioneers of the Mississippi Valley; Pioneers of the Rocky Mountains and the West* — Macmillan
Stone and Fickett. *Everyday Life in the Colonies* — Heath

GEOGRAPHY AND TRAVEL

Fairgrieve and Young. *The United States* — Appleton
Pack. *School Book of Forestry* — Lippincott
Fisher. *Resources and Industries of the United States* — Ginn
Price. *The Land We Live In* — Small
Southworth and Kramer. *Great Cities of the United States* — Iroquois
Allen. *Geographical and Industrial Studies* (One for each continent) — Ginn, Macmillan
Chamberlain. *Continents and Their People* (One for each continent) — Macmillan
Stefansson. *Northward Ho!*

SCIENCE

Craig. *Nature Study for Boys and Girls.* Book III — McIndoo
Hawksworth. *The Clever Little People with Six Legs* — Scribner
Chapman. *The Travels of Birds; Our Winter Birds* — Appleton
Burroughs. *Squirrels and Other Fur-Bearers* — Houghton

CITIZENSHIP

Jewett. *Town and City* — Ginn

Grades 6, 7, and 8

HISTORY

Faris. *Real Stories of the Geography Makers*	Ginn
Van Loon. *The Story of Mankind (School Ed.)*	Macmillan
Meeker. *Ox Team Days on the Oregon Trail*	World Book
Sanford. *The Story of Agriculture in U. S.*	Heath
E. C. Brooks. *Stories of South America*	Johnson
Parkman. *The Oregon Trail*	Merrill
Nida. *Following the Frontier*	Macmillan
Forman. *Stories of Useful Inventions*	Century
Roosevelt and Lodge. *Hero Tales from American History*	Century
Hall. *Our Ancestors in Europe*	Silver

GEOGRAPHY AND TRAVEL

Babson. *A Central American Journey*	Silver
Keller and Bishop. *Commercial and Industrial Geography*	Ginn
Bishop. *Panama, Past and Present*	Century
Hotchkiss. *Representative Cities of U. S.*	Houghton
Stefansson. *My Life with the Eskimo*	Macmillan
Rabenort. *The Continents.* (One for each continent)	American
Bishop and Keller. *Industry and Trade*	Ginn
Smith. *The World's Food Resources*	Holt

SCIENCE

Jordan. *The Story of a Seal*	World
Fabre. *Insect Adventures*	World
Hawksworth. *The Strange Adventures of a Pebble*	Scribner
Slosson. *Creative Chemistry*	Century

CITIZENSHIP

Austin. *Uncle Sam's Secrets*	Appleton
Ingraham. *The Story of Democracy*	Macmillan

SUMMARY OF THE CHAPTER

The present chapter has outlined in detail a course in reading and study for grades four, five, and six and has attempted to suggest how the teacher in this period may gradually build up fundamental attitudes, knowledges, skills, and habits which will function in the child's later work with books. The outline for each grade was discussed in detail. The attitudes, knowledges, skills, and habits were gradually developed from simple to more complex forms. The picture of a well-trained pupil at the end of the sixth grade may seem very much idealized and impossible of immediate attainment, but it represents a composite picture of what may be expected to grow out of a well-planned, specific, and systematic attempt to teach children to read and study.

SUGGESTIVE PROBLEMS

1. Should one attempt to make pupils conscious of their processes in study before grade seven? Give your reasons for your answer.

2. How are attitudes best developed in these grades — by direct or by indirect methods?

3. If children are taught principles of study, what is the best method of presenting such principles?

4. When shall such direct instruction as is suggested in this chapter be given?

5. In a departmentalized school, who should have charge of training children to study?

6. Discuss the relative importance of learning facts in school subjects and learning to read, think, and study as outlined in this chapter.

7. How can one tell when children have made satisfactory attainment in the outlined attitudes, knowledges, habits, and skills?

8. How long will it take to develop the program as outlined in Chapter XII?

9. What training must the teacher have to carry out such a program?

10. What contribution, or addition, does this outlined course make to the typical course of study in reading?

SUPPLEMENTARY READING

1. ANDERSON, E. J., and DAVIDSON, I. — *Reading Objectives*, Chapters XII and XIII. Laurel Book, 1925.

2. GERMANE, C. E., and GERMANE, E. G. — *Silent Reading*, Chapters XIII and XIV. Row, Peterson, 1922.

3. LYMAN, R. L. — *The Mind at Work*, Chapter VI. Scott, 1924.

4. PENNELL, MARY E., and CUSACK, ALICE. — *How to Teach Reading*, Chapter XIII. Houghton, 1924.

5. *Rochester Reading Attainment Chart.* Rochester Public Schools, Rochester, N. Y.

6. STONE, C. R. — *Silent Reading and Oral Reading.* Houghton, 1922.

7. *Twenty-fourth Yearbook of the National Society for the Study of Education*, Part I. Chapters III and V. Public School Publishing Co., 1925.

8. WHEAT, H. G. — *The Teaching of Reading*, Chapters XIV, XV, and XVI. Ginn, 1923.

9. WHIPPLE, G. M. — *How to Study Effectively.* Public School Publishing Co., 1916.

CHAPTER XVI

The Diagnosis of Reading and Study Difficulties and Their Treatment

Diagnosis a term only recently found in education. — The term *diagnosis* as applied to the discovery of causes for the failure of children to respond to ordinary classroom instruction efficiently, has been used for only a few years in educational writings. The practice of the medical profession of making very careful diagnoses of individual weaknesses and of eradicating disease scientifically by exact remedial treatment has doubtless suggested to those who work with the development of the human mind that methods of a similar nature might be used in determining the causes of failure of individuals to profit by group instruction in the school. Possibly all that has been borrowed by teachers from medical science is a terminology, but the idea has been so fruitful of results and objective tests of results have been so encouraging, that those who are engaged in developing scientific method in education are hopeful that there will soon be a body of knowledge, method, and technique that will enable the teacher and supervisor to detect the cause for failure in a large number of cases which now baffle them. As a matter of fact so successful have been the experiments of several workers in this field that this may already be said to have been

accomplished. The work of Thorndike, Judd, Monroe, Gray, Anderson and Merton, Uhl, Zirbes, and others in reading; that of Thorndike, Monroe, Courtis, and Woody in arithmetic; and the studies of Judd, Freeman, and others in handwriting has demonstrated the practicability of diagnosing weaknesses in these subjects and of making instruction of a remedial nature accomplish far more than the generalized group instruction of the past. The scientific testing movement has been largely responsible for this development and to it teachers must give thanks for the solution of many hitherto baffling problems. Diagnostic testing and remedial teaching are now in a stage of rapid development. The professionally minded teacher need have no fear that the use of the medical terminology applied to this type of work is either presumptuous or inappropriate.

PART I. DIAGNOSIS IN READING AND STUDY

Inasmuch as reading is, as a rule, the principal activity involved in study, the reports of diagnoses of reading difficulties have a direct bearing upon the improvement of study habits and the eradication of study difficulties. In part this application has been made, but there is still much to be done in carrying over what has been learned in the study of reading to other situations in which reading is not the principal factor. An extension of the knowledges, methods, and techniques to the whole problem of study is very desirable.

It is obvious that pupils who are poor readers will be poor in study activities involving reading. In so-called assimilative and analytical reading they will be

seriously handicapped. One of the most fruitful methods of improving study, then, is by means of the observation and measurement of reading. Methods of individual and group diagnoses are already available for the teacher. It remains for her to become acquainted with these materials and to apply them to classroom instruction. Some suggestions for making this application more easy are given in the present chapter.

A review of available materials. — A complete list of the writings already available on the subject of diagnosis and remedial instruction would be far too extensive for our purpose. Some of the principal contributions from the field of scientific research will be presented here and the general principles summarized. To the student of the more scientific aspects of this problem there is already available an excellent book [1] in a very readable form, in which is given a detailed treatment of the problems of diagnosis and remedial work. This book together with magazine articles and other special treatises, contains material of a practical character, which, if properly organized for the teacher, should enable her to make a very successful attack upon the problem of diagnosis and remedial treatment. Practical suggestions from this material have been included in books by Stone,[2] Germane and Germane,[3] and Wheat,[4] but nobody has carried the application of

[1] Gray, C. T. *Deficiencies in Reading Ability: Their Diagnosis and Remedies.* Heath, 1922.

[2] Stone, C. R. *Silent and Oral Reading.* Chap. X. Houghton, 1922.

[3] Germane, C. E. and Germane, E. G. *Silent Reading.* Chaps. VII and VIII. Row, Peterson, 1922.

[4] Wheat, H. G. *The Teaching of Reading.* Chap. XVII. Ginn, 1923.

the materials and methods over to the general problem of study as the writer hopes to do.

Earlier studies of diagnosis and remedial treatment in reading. — Uhl [1] made one of the first studies of diagnosis in reading during a summer session at the Training School of the Oshkosh Normal School when many children deficient in reading ability were enrolled, and demonstrated the practicability of using standard tests as a means of getting at individual weakness in classes in reading. Individual pupils in grades three to eight inclusive were then trained intensively for fifteen minutes per day, in an attempt to remedy weaknesses. The results of the experiment were so successful that Uhl recommended the method as practicable for the ordinary school where unassigned teachers were available for individual instruction. By means of observation and the use of group and individual tests, Uhl discovered that weaknesses in reading among these pupils were due to the following causes: too great care in reading; mispronunciation of small words; carelessness; carrying over directions from one test to another; reading word by word instead of by thought groups; reading very loudly; and repeating the first word of every sentence. By observation certain general defects were also discovered; namely, lack of intelligent interpretation, hesitancy, and gross bodily movements which distracted the attention of the reader. Uhl concluded that individual treatment of poor readers of ordinary ability will produce as much improvement

[1] Uhl, W. L. "The Use of the Results of Reading Tests as a Basis for Planning Remedial Work." *Elementary School Journal*, XVII, 266–75.

among them as class instruction among brighter children. This study, while a preliminary attempt, doubtless suggested to others the development of diagnosis and remedial treatment.

Zirbes[1] published some time later a very suggestive study, which, using the same general method, indicated that objective measurements of the results of diagnosis and remedial treatment argued strongly for individualizing the instruction in reading. She diagnosed the weaknesses of twenty boys by means of tests and observation and used ten types of training exercises to improve their reading ability. Results were again so encouraging that she recommended the plan to teachers in the classroom as the practicable means of improving ability in reading most surely and economically. The defects noted by this writer were lack of proper phrasing, lack of proper eye-movement habits, lack of ability to get the meaning from a passage as a whole, lack of ability to get a particular idea; lack of ability to differentiate between words, errors in oral reading such as omissions, repetitions, substitutions, and the like; lack of proper breath control; lack of articulation; and lack of voice control. The noticeable thing about the work of Miss Zirbes is the specific attack upon the individual problems of her group and the specific remedial exercises which were devised for eliminating the weaknesses discovered. This is an example of the best modern teaching.

Courtis[2] had at an earlier date suggested a means of

[1] Zirbes, Laura. "Diagnostic Measurement as a Basis for Procedure." *Elementary School Journal*, XVIII, 505–52.

[2] Courtis, S. A. *Standard Research Tests*, Folder B.

diagnosing classes after measuring them with his *Silent Reading Test* No. 2. His diagnostic chart, as given in the folder accompanying his test, presents a practical means for detecting weaknesses in a given group and for grouping a class for remedial instruction according to the prevailing types of weaknesses found.

Monroe[1] reviewed the work of Courtis, Thorndike, Judd, Zirbes, and others and gave practical suggestions for the diagnosis of weaknesses and for remedial instruction to follow. This chapter is still a most excellent introduction to the problem of diagnosis and remedial instruction.

Later studies of diagnostic and remedial work in reading. — Anderson and Merton[2] carried on experiments at Stoughton, Wisconsin, which demonstrated the practicability of using diagnostic and remedial instruction in the ordinary classroom. They enumerated types of weaknesses and indicated types of remedial instruction which are very suggestive to the teacher. In these articles these writers also report case studies of six pupils backward in reading and give a detailed account of measures taken to discover and remedy their weaknesses. These studies are not reviewed here but similar studies by Gray will be rather fully reviewed to illustrate the general procedures involved.

Gray's studies of individual children. — The work of W. S. Gray[3] and his students in the laboratories of the University of Chicago and elsewhere, now pub-

[1] Monroe, W. S. *Measuring Results of Teaching.* Chap. III.

[2] Anderson, C. J. and Merton, E. "Remedial Work in Reading." *Elementary School Journal,* XX, 685–701, 772–91.

[3] *Remedial Cases in Reading: Their Diagnosis and Treatment.*

lished in complete monograph form, constitute a wealth of material on diagnosis and remedial treatment in reading that is bound to affect the teaching of reading profoundly. In his introduction Gray enumerates the problems which are involved in diagnostic and remedial instruction as follows:

Wherever diagnostic and remedial studies have been undertaken, four problems have been encountered which are in urgent need of solution. In the first place, there is need of specific information concerning important types of remedial cases. Detailed descriptions of the characteristics of the various types will help teachers to recognize more quickly and to classify more accurately the pupils under their instruction who encounter difficulties in reading. In the second place, there is need of detailed information concerning appropriate instruction for remedial cases. In this connection methods of teaching and drill devices are needed which will enable teachers to give remedial instruction economically and effectively. In the third place, the technique of diagnosis should be developed in greater detail; it should be refined to a point of accuracy and precision; and it should be simplified sufficiently to enable teachers to make frequent studies of individual cases. Finally there is urgent need for teachers who are thoroughly trained to engage in diagnostic and remedial work effectively.

As a preliminary step in his investigation, Gray reviewed the published reports of other investigators of remedial work and described five types of failure in reading. These type cases are significant. They include the following:

Case I: A third-grade boy who was seriously retarded in all the phases of reading.

Case II: A fluent oral reader in the fourth grade who comprehended nothing read silently.

Case III: A third-grade boy who was relatively strong in ability to interpret but who was greatly retarded in the mechanics of reading.

Case IV: A fifth-grade boy who read very slowly.
Case V: A rapid reader who neglected details.

The above cases were gathered from published reports. They represent the five types of cases which are distinctly different from each other and which will help the teacher to classify her pupils who are having difficulty into five groups, the difficulties of each of which require somewhat similar treatment. The description of these cases is very suggestive in detail and should be read by every teacher.

The specific causes of poor reading, as summarized by Gray from the reports of others, comprise fourteen weaknesses.[1]

1. *Inferior learning capacity.* This at times prohibits the child's learning to read, but inferior children can sometimes be taught to read effectively.

2. *Congenital word blindness.* This is a defect which is due to some lack of development of the areas of the brain which are used in reading. Children who, because of this defect, cannot be taught to read by ordinary methods, should be taught orally.

3. *Poor auditory memory.* This is remediable in some cases if special methods of teaching are employed.

4. *Defective vision.* Care should be taken to ascertain that vision is normal if reading is poor. The fitting of glasses in the case of some children will result in immediate improvement in reading.

5. *A narrow span of recognition.* This means inability to take in at a single fixation of the eyes more than a short part of a printed line. It can be remedied by short-exposure exercises if they are begun soon enough, preferably before the fourth year.

6. *Ineffective eye movements.* Pupils sometimes fail to learn habits of moving the eyes along the line in rhythmic sweeps and of accurately returning the eye from the end of one line to the beginning of the next. Training will help to eradicate bad habits and establish correct new habits.

[1] The points are taken from Gray's study. The comments are for the most part by the author.

7. *Inadequate training in phonetics.* Some children need phonetic training more than others. Training in phonetics will often give a child ability to attack new words independently and hence result in immediate improvement in reading.

8. *Inadequate attention to content.* Some children give too much attention to word recognition and hence fail in comprehending what they read. Lessening the amount of phonetic analysis and increasing emphasis upon content will help correct this fault.

9. *An inadequate speaking vocabulary.* Sometimes foreign children fail in reading because they do not know the language. Systematic training in speaking and in understanding words will help remedy this fault.

10. *A small meaning vocabulary.* Sometimes pupils come from homes in which a very meager vocabulary is used in conversation and they fail to read because they do not understand the meaning of many words. The remedy is vocabulary exercises of various sorts.

11. *Speech defects.* Failure in oral reading is sometimes caused by speech defects. Training will help to eradicate these defects and hence improve the oral reading ability.

12. *Lack of interest.* This defect may be due to physical causes or to lack of encouragement and opportunity to read in school and at home. Special individual effort with this type of child often yields very good results.

13. *Guessing versus accurate recognition.* Some children form the habit of guessing at words which they do not know. They need special training in accurate work of recognition.

14. *Timidity.* Some children fail to learn to read because of timidity or lack of confidence. These children need special remedial treatment.

Gray's studies of individual children, which form the principal part of this monograph, exhibit so clearly the techniques involved in diagnostic and remedial treatment that the writer would recommend the review of this monograph in detail. A study of twenty-seven pupils in Chicago and twenty-seven pupils in Toledo adds to the total number of case studies of pupils defective in reading to make the number of different

cases of considerable range and detail. These cases with those discussed by Judd, Anderson and Merton, Willard, and others make up enough material for a respectable case book which might be consulted by teachers in their efforts to find out methods of diagnosis and remedial treatment of difficult cases which confront them in the classroom.

The meaning of these studies. — These studies of individual children suggest lines of attack in the attempt to give individual instruction to children in the classroom. In so far as the classroom teacher is able to do so she must follow the general methods used here. By grouping children with similar difficulties together she may effect economies which are very desirable. Zirbes, Uhl, and others have proved that such instruction can be given to small groups. Gray has contributed a technique for handling individual diagnosis and treatment and has indicated that such treatment will take care of individual cases. He has accumulated the detailed cases which indicate the types of difficulties which children have and has shown how these cases can be successfully treated. Adaptations of his methods and techniques to ordinary classroom conditions should result in much better teaching of reading. Whether or not better results could be gained by abandoning the group method of instruction with children and using individual instruction entirely in teaching reading skills, is a point still under investigation. In the meantime teachers will find these cases rich in suggestion for more effective teaching even by ordinary group methods of instruction. The detection of weak-

nesses is also rendered more easy; for instead of going through with the detailed study of individuals in order to determine just what is the matter with them and what types of remedial instruction might be used in a given case, the teacher will often be able to identify the difficulties of a given case as similar to one of the case studies which Gray has collected and can find in his remedial procedures the best type of corrective instruction for the case under consideration. This will result in a great saving of time and make possible far more remedial work than would be possible if the teacher had to invent her own techniques and make an experimental study of each case.

Gates's study of reading disabilities. — Gates made a study of the *Psychology of Reading and Spelling with Special Reference to Disability*[1] in which he reports the results of his experimental work with pupils of the Scarborough School. The methods used to diagnose disabilities are those of the experimental psychologist and are too technical for use by the untrained teacher. His conclusions are, however, very significant. He divides the causes of backwardness in reading and spelling into five classes:

A. Unfavorable training and environmental influences.
B. Unfavorable behavior of a general character.
C. Defects of the sensory mechanisms.
D. Defects of the motor mechanisms.
E. Defects of the connecting mechanisms.

The detailed causes will be listed under the appropriate heads.

[1] Teachers College Contribution to Education, No. 129, Columbia University, 1922.

A. Unfavorable Training and Environmental Influences.

1. *Neglect of training in visual perception of words.* Some pupils who are trained by the word method fail to learn how to attack new words and are hence inaccurate in oral and silent reading.

2. *Inappropriate forms of phonic, phonetic, or other types of analytical training.* These result frequently in unfavorable types of perception and in other ineffective habits.

3. *Changes from one form of phonic, phonetic, or visual training to another.* These may have resulted in inhibitions or confusions which prevented the formation of effective perceptual habits, although it is usually impossible to tell whether change of training or the effects of some inappropriate form of training is causal.

4. *The effects of early training in foreign languages.* Gates could discover only meager evidence on this point and could not conclude with certainty that early study of foreign languages might cause disability in learning reading or spelling.

5. *Unfavorable home training.* This may be a cause of failure to learn to read in certain special cases, particularly if the child is read to at home instead of being encouraged to read to himself.

6. *Irregular attendance, illness, change of schools, home instruction of unfavorable sorts occurring at critical periods in the process of learning.* These may contribute considerably to real difficulty in reading.

B. Backwardness Due to Unfavorable Behavior of a General Character.

1. *Disinclination, inertia, etc.* These things exist but Gates was unable to discover the ultimate causes for them.

2. *Emotional or nervous instability.* This condition often causes children to be poor in rote learning. They are hasty and inaccurate in reading and spelling. The remedy suggested by Gates would in general tend to reduce the amount of nervous excitability.

C. Defects of Sensory Mechanisms.

1. *Defects of vision.* Gates recommends a thorough examination of the eyes in all cases of backwardness in reading or spelling.

2. *Defects of hearing.* Gates did not find this a factor except in one case. He points out that there is danger in attributing failure in learning to auditory deficiencies.

D. Defects of Motor Mechanisms.

1. *Defects in general motor coördination and control.* Gates did not accumulate much evidence on this point although he found

four cases of poor writers who had some difficulty in learning to read or spell because of faulty motor control.

2. *Defective writing ability.* Gates found that this seemed to be in some cases associated with poor spelling ability.

3. *Defective articulation is definitely associated with disability in reading and spelling in the case of one child.*

4. *Defective eye-muscle control.* This is a cause of disability in reading and spelling but yields to treatment.

5. *Inappropriate eye movements.* Gates concludes that inappropriate eye movements are secondary; that is, they result from other types of difficulty and readjust themselves when other deficiencies are corrected.

6. *Inappropriate eye-voice span.* This seems to Gates to be the result of other difficulties rather than the cause of them.

E. Defects or Deficiencies of the Connecting Mechanisms.

1. *General mental ability.* Gates says that an I.Q. of 70 is probably essential to comprehensive reading. Some children of less than this ability can learn to pronounce words separately but they can not comprehend thought.

2. *Congenital defects of cortical areas.* These defects are extremely rare and are probably not the cause of most cases of disability which confront the teacher. Cases so diagnosed by the professional eye specialist are not really due to congenital defects; such individuals can learn to read well if special training is given.

3. *Defects of visual memory, auditory memory, inability to associate auditory and visual symbols, and the like.* These causes for failure to read are very doubtful in the opinion of Gates.

4. *Defects of general visual perception or discrimination—visualization.* Gates inclines to believe in this type of defect.

5. *Defects of visual imagery.* Gates found no case of this type.

6. *The concept of special disability.* Gates does not believe that there is a type of disability of this sort.

The above summary lists the types of causes which Gates considered in his study of deficiencies in reading and spelling. It is of value to the teacher in that it adds some special types to the analyses of deficiencies listed by other writers, and organizes the causes of difficulty into groups in accordance with their general origin, whether that origin is in outside influences or within the nervous organism of the learner.

What a tabular study of the diagnostic work in reading shows. — A tabular study of the reports on diagnostic and remedial work in reading which have

TABLE XV

GENERAL CAUSES FOR INEFFICIENCY IN READING

CAUSE	INVESTIGATOR MENTIONING CAUSE				
	Gray	*Zirbes*	*Anderson and Merton*	*Uhl*	*Gates*
1. Carelessness	x		x	x	
2. Timidity	x			x	
3. Lack of interest	x				x
4. Inability to think logically	x				
5. Short span of attention	x	x	x		
6. Poor native intelligence	x				x
7. Congenital word-blindness	x				x
8. Inattention	x				
9. Poor auditory memory	x				x
10. Poor visual memory	x				x
11. Defective vision	x				x
12. Speech defects	x	x			
13. General immaturity	x				
14. Malnutrition	x				x
15. Nervous instability	x				x
16. Irregular attendance	x				x
17. Foreign language in home	x				x
18. Defects in general motor coördinations					x
19. Too narrow range of experience	x				
20. Immature language habits	x				
21. Poor instruction	x				
22. Inadequate materials	x				

been reviewed in the preceding pages shows that the common general causes for failure of the child to succeed in reading are those listed in Table XV.

The mechanical difficulties which are operative when children fail to learn to read effectively are summarized in Table XVI.

TABLE XVI

MECHANICAL DIFFICULTIES IN READING

NATURE OF DIFFICULTY	INVESTIGATOR MENTIONING				
	Gray	*Zirbes*	*Anderson and Merton*	*Uhl*	*Gates*
1. Mispronunciation of small words	x			x	
2. Repeating first word of every sentence				x	
3. Lack of proper phrasing		x			
4. Faulty eye movement	x	x			x
5. Failure to move eye accurately in return sweeps	x				
6. Failure to note small or key words			x		
7. Failure to differentiate between words similar in form	x		x		
8. Using finger to follow line		x	x		
9. Speech defects	x	x			
10. Defective eye-muscle control	x				x
11. Inability to associate word pronounced with symbol	x				
12. Lack of ability to differentiate between words		x			
13. Inadequate eye-voice span	x				x
14. Lip movement	x		x		
15. Short unit of recognition	x				
16. Difficulties in perception of words			x		x

The latter table does not include all possible mechanical difficulties but is fairly complete and includes those mentioned in their summaries by the various writers.

Difficulties in understanding which have been prominently mentioned by the different investigators are summarized in Table XVII.

TABLE XVII

DIFFICULTIES IN UNDERSTANDING IN READING

NATURE OF DIFFICULTY	INVESTIGATOR MENTIONING				
	Gray	*Zirbes*	*Anderson and Merton*	*Uhl*	*Gates*
1. Too great care in reading	x			x	
2. Carrying over directions from one exercise to another				x	
3. Reading by words instead of by thought groups			x		
4. Inability to get particular details		x			
5. Inability to get main thought		x	x		
6. Lack of vocabulary of meanings	x		x		
7. Failure to verify meaning	x				
8. Omission of part of ideas	x		x		
9. Substitute pupil's thought for author's	x		x		
10. Inability to think logically	x		x		
11. Inability to reproduce			x		
12. Inability to find answer to question			x		
13. Inadequate attention to content	x				
14. Lack of experience with materials read	x				
15. Poor materials	x				
16. Poor instruction	x				

The summary gives some of the most frequently mentioned difficulties which accompany lack of understanding of materials read. This list is sufficiently suggestive to the teacher to cause her to realize the complexity of the task of finding out why children read without comprehension and to suggest lines of attack and emphasis upon the problem which should result in greatly increased efficiency in reading.

A review of the types of cases which have been found by different investigators is summarized by Gray and needs merely to be repeated here in summary form.

Type I: Pupils who have made little or no progress in learning to read.
Type II: Pupils who have had difficulties in interpretation.
Type III: Pupils who have mechanical difficulties primarily.
Type IV: Pupils who have difficulties in rate of reading.
Type V: Pupils who are weak in all phases in reading.

Gray's investigation seems to show that the above classification would include most of the cases which are likely to be found. Where variations were found they would need to be compared with the twenty-seven type cases of Gray. The teacher can use the above classification in dividing her pupils into groups with some assurance that she is covering the main types of difficulty. Consultation of Gray's remedial exercises in these type cases would suggest a line of remedial instruction which should produce results.

Types of remedial instruction most commonly used. — It would seem, even though there are many individual variations in types of difficulty and even though it seems necessary to devote a great deal of study to

individual cases in the earlier stages of the investigation of diagnosis and remedial treatment, that out of the experience gained in the treatment of a number of individual cases some general practices and principles should emerge. This is exactly what happens when the literature of remedial instruction is studied. Gray summarized the most frequently used types of remedial instruction in his monograph.[1] His summary is further condensed by the writer as follows:

1. Exercises to increase accuracy of recognition, including word drills in sentences to encourage recognition of words in context and flash-card drills to encourage quick perception of the same words independently; word drills on words similar in form; and study of words in context which are missed when isolated.
2. Exercises to increase the span of recognition. These are commonly known as phrase drills. Cards are flashed rapidly to develop power to read phrases instead of word by word.
3. Exercises to increase ability in word recognition. These revert to the early training in phonetics, word pronunciation, learning of rules for pronunciation, and similar exercises for the purpose of developing the power to recognize words independently.
4. Exercises to aid in interpretation. Devices mentioned by Gray are practice in distinguishing thought units, reading to find the answers to questions, and exercises to develop the power to follow directions and think independently.

An examination of Gray's detailed account of the remedial work he reports will reveal also that a great deal of emphasis was placed upon developing interest and a sense of responsibility on the part of the child. Variations of the above exercises are of course used for different children but the deviation from type is not great.

[1] Pp. 33–36.

Using the foregoing types of exercises in regular class instruction. — That it is not only theoretically desirable but entirely possible to use the types of exercises described in the preceding section with regular classes has been demonstrated by the writer and his teachers in the reading classes of a training school for teachers. During a period of three years the pupils in the training school of which the writer was director were taught silent reading by means of such exercises as are mentioned above. The critic teachers, aided by their student teachers, prepared a large number of flash cards showing words, phrases, and sentences. Exercises objective in character consisting of completion tests, exercises in following directions, finding the answers to simple questions, finding the answers to problems, and the like, were prepared and used in grades one to four inclusive. These exercises were gradually increased in difficulty and length grade by grade. In grades five and six much use was made of exercises in finding the answers to questions and problems which were considered in the work in geography and history. Pupils in all grades were taught skills in using books and given practice in those skills until they were able to do readily such reading as was demanded of them in their content subjects. The result was that during these three years the rate and effectiveness of the reading in all classes in this school was kept from one to two years above the national standards for the Courtis, Monroe, Haggerty, and other silent-reading tests.

Classes were measured three times per year regularly.

A careful diagnosis of class weaknesses was made after each measurement and the practice exercises were changed to meet the needs which an analysis of the scores on the tests revealed. If, for instance, it was found that rate of reading was high and comprehension low, increased emphasis was placed upon vocabulary exercises, exercises in answering questions and problems, direction exercises, and the like. Generally the instruction given in word recognition, phonetic drill, and phrase-flashing exercises increased reading efficiency to such an extent that need for individual remedial work was not felt except for those children who came in each summer from adjoining schools where silent reading was not emphasized.

One great service that the research work in diagnostic and remedial fields has performed for classroom teachers is to indicate to them very clearly the types of training which are efficient in overcoming the weaknesses of children who have been trained by faulty methods of teaching reading. The writer is of the opinion that if these same methods were normally used with children who are attending regular classes, the need for individual remedial work would not be so great. It is surely more scientific to prevent disease than to cure it. The experience related in the preceding paragraph seems to the writer to promise clearly that when exercises which were used by Gray in his experimental work are used by the classroom teacher in her regular instruction, fewer children will fall by the wayside in need of special individual attention.

A summary of the general significance of the studies of diagnostic and remedial work in reading. — The studies in diagnostic and remedial work in reading which have been reviewed in Part I of this chapter seem to permit certain general conclusions to be drawn.

1. Regular class instruction has not been efficient in training certain pupils to read.

2. Individual diagnostic and remedial studies have often revealed the cause of weakness, and individual remedial work has been astonishingly successful in removing difficulties in a large proportion of cases.

3. Reading difficulties among untrained children are due to a lack of interest, lack of confidence in ability to read, poor native intelligence, and unsuitable training in the mechanics of reading and in interpretation of the printed page.

4. The chief remedial measures taken with backward children have been measures to arouse interest and endeavor, to increase ability in word recognition, to improve eye movements and the span of recognition, and to increase comprehension of the material read.

5. Careful testing and retesting by means of standardized and informal tests has been of great service to investigators and teachers in detecting weaknesses.

6. A technique of diagnostic and remedial procedure has been devised which will apply in a general way to groups as well as individuals.

7. The success of individual remedial measures suggests that if exercises of a similar character were used in regular class teaching the necessity of much individual diagnostic and remedial work might be avoided.

8. As long as children are taught by faulty methods, however, individual diagnostic and remedial work will be necessary. It is, nevertheless, a time-consuming and expensive process and in large schools it would seem imperative that methods of handling pupils in groups should be used.

9. The experimental studies in diagnosis and remedial measures have revealed so much concerning the evil effects of bad methods in reading and the nature of the correct methods to be used in teaching children to read, that they may be said to constitute one of the most significant contributions of recent years. This material exemplifies the application of scientific method to the study of the learning processes in reading as used by children who were failing to progress, and indirectly, it supplies much evidence to show that modern methods of teaching are highly efficient in eradicating the weaknesses that are often developed by faulty methods used in the past.

PART II. DIAGNOSTIC AND REMEDIAL WORK IN STUDY

Need for making application of diagnosis and remedial instruction to other types of study. — As pointed out in Chapter III, there are other activities in study than those included in reading the printed page. The emphasis which has been placed upon books in study situations seems, however, to have resulted in making reading and rereading almost synonymous with study in the mind of the average student and teacher. There is much need, therefore, of applying the methods used by the investigators whose work was reviewed in

the first part of the chapter to all types of study. It is recognized that if study in adulthood is to be efficient, training for it must include reading of all sorts — simple scanning, rapid reading, reading to memorize words or ideas, careful assimilative and analytical reading, and problem-solving through reading. There are, nevertheless, many other activities involved in study. Attitudes toward work; knowledge about books, the library, and other sources of information; skills in the use of books and the library; and training in the recording and organizing of materials which have been gathered, are necessary. Then again, powers of observation must be trained and the student must learn to think for himself with or without books if he is to become a student in the fullest sense of the term. It is obvious that many things may be wrong when pupils fail to study other than the ability to read the printed page accurately. The habit of work may never have been formed, attitudes of responsibility may have been neglected, skills in the use of books may never have been developed, and practice in thinking may have been slighted, as well as skill in recording thoughts and organizing materials. It is therefore clear that the techniques of diagnosis applied to reading as reviewed in Part I of this chapter, apply only to those phases of study which directly employ reading skill. It would seem that the idea of diagnostic and remedial instruction might be broadened to include all phases of study.

A general attack upon the whole study problem. — In the interest of economy, teachers must be given a

general method of attack upon the improvement of study. This means that a complete analysis of the attitudes, knowledges, abilities, and habits used in study must be made and some means devised for enabling the teacher to use this analysis in her attempt to diagnose the difficulties of children who are backward in study. In the following paragraphs an attempt will be made to give a preliminary analysis of the above factors and to indicate how such an analysis may be used in improving study habits where they are imperfect or lacking.

Attitude toward study. — In Chapter XI a discussion of the importance of right attitudes toward the school and toward reading and study was given. It was shown that failure to succeed in an activity is all too often due to lack of interest or motive for work. To get the child to engage whole-heartedly in an activity is often a most difficult thing. Particularly is this true in this day of many interests outside the school, all competing with the school program for the interest of the child. Then, too, attitudes toward worth-while things in general are often discouraged by the emphasis placed upon getting and gaining in our money-mad age. There is too much temptation in life outside the school for engagement in activities that are seemingly more profitable to the child than study because they lead to immediate gratification of the desire to enjoy and to gain. The school must attack specifically the problem of creating right attitudes in the child toward worth-while study, or work with books, and toward worth-while thinking, or study, on problems of individual and

social value. The teacher needs to ask, when she finds pupils whose attempts to study are failing, "What is the cause for this failure? Does it lie in the failure of the school to develop the right attitude in this child toward study?"

That the school does fail in this fundamental duty is apparent when the attitude of college students toward work is considered. There is too much of the spirit of doing enough merely to "get by," too little of honest pride in good work well done, and too little responsibility on the part of the individual for making his contribution to the general welfare of the group. Athletic and social trophies are prized far above the rewards given to scholarship; and the reward goes all too often to the one who excels in the physical or the social realm rather than to the one who spends his time in study and thinking.

To be particular, the teacher needs to consider the following factors in her analysis of the attitude of the child toward study.

1. *Motives for work.* Are the things which the child is asked to do worth while for him? Can he see that they will mean something to him to-day, to-morrow and later in his life? Is he firmly convinced that he is engaged in profitable work or is he merely going through the motions because he must?

2. *Satisfactions.* Does the child get real pleasure out of his work? Does he succeed often enough to make it interesting, or is he an habitual failure who has failed so often that he expects nothing else? Unless the situation which involves study is more satisfactory on

the whole than disappointing, the child can not be expected to persevere.

3. *Influence of the home.* Is there any encouragement for this child to study at home, or do his parents send him to school merely because they must? If the latter is the case, what can the teacher do to create more favorable attitudes towards the school on the part of the parents?

4. *Atmosphere of the school.* Is the atmosphere of the school such that it lays great stress upon good work? Is the course of study itself worth while, or is it filled with activities in which the child cannot have faith? Does it connect up with life at every turn? Is it child-like? Does it contain stimulating social projects, worth-while constructive activities, and opportunities for the child to be active physically and mentally? Or does it lay the major emphasis upon memorizing a text-book and reciting? If the latter, certain children are, fortunately, wise enough to see the futility of it and to refuse to engage in activities which seem entirely fruitless to them. Does this school have a well-organized plan to convert children to the belief that study and work are worth while, or is nothing done to counteract the vicious propaganda of the streets, the movie, the tabloid newspaper, the cheap magazine, and the cheap novel? Unless the latter is done purposefully and consciously, there is grave danger that the child will fail to take the school and his activities therein seriously. When schools fail to give satisfactions to children, certain of them, sometimes later called geniuses and highly honored by society, including universities and learned

bodies, refuse to play the game and eliminate themselves from the activities in the school to engage in what seem for them more worth-while activities in life.

The writer can not state too strongly the necessity for the teacher to consider the creation of right attitudes toward work and study. This basic step is too often neglected. The attempt to rear the superstructure of an education upon a foundation of unwillingness, disbelief, and confusion is like building one's house upon the sands. If basic attitudes are wrong, the most finished system of teaching knowledges, skills, and habits in the world will not result in anything much worth while. Attitudes must be created early and efforts must be continued for a long period in order to impress the child with a firm belief in the values of study and work. It is time we stopped building mainly athletic fields and great buildings to house our schools in America and began to create libraries, workshops, and laboratories in which to train the young scholar, scientist, or professional man of to-morrow how to find himself. This we have begun to do in our more progressive public schools and in our experimental schools, but it is far from being accomplished in the average classroom in which American citizens are being trained.

Knowledge about study. — If the knowledge about how to study exhibited by the average teacher in the summer schools of universities is representative of the teaching body as a whole, then it must be said that if the American child in the elementary school is to learn how to study he must do it largely by the trial and error method. When the child is failing in his study,

the teacher must be able to analyze the knowledge about study which he possesses to determine whether or not this is the cause of his failure. A child who just "learns what he is supposed to" when he studies is certainly not very well equipped to do successful work either with books or without them. The teacher must analyze the following knowledges in order to determine what type of help a failing pupil needs:

1. *Knowledge of methods of study.* Does this child know any of the simple methods of procedure in successful study such as have been listed by Whipple in *How to Study Effectively* or does he merely proceed as the humor strikes him without plan or purpose and without rhyme or reason? If the latter is the case, instruction in some of the simple principles and practice in their use will help considerably in improving study results.

2. *Knowledge of the nature and use of books.* Does the child know how books are made, what their parts are, what kinds of books are available for his use and how they should be used? If he has no knowledge except such incidental information as he has picked up, instruction in books and their uses will help to remedy difficulties which may be due to this cause.

3. *Knowledge of the library.* Does the child know what the library is for, how to use a card index, magazine index, encyclopedia, dictionary, statistical abstract, and other useful reference books? If he has no knowledge of these things he is by that fact limited to a very narrow range of material. Instruction in these matters will improve his general efficiency in study.

4. *Knowledge about summarizing, outlining, and note-taking.* Does the child know about the importance of fixing facts in mind and does he have the knowledge necessary to prepare an outline, take simple notes, and the like? These are most important facts that must be known if work of the better type is to be done.

5. *Knowledge of reporting and reproducing.* Can the child utilize the knowledge necessary to enable him to prepare a simple oral or written report? Does he know the difference between a good and bad report? Does he know what and how to reproduce verbatim, if necessary, valuable material which he has collected?

6. *Knowledge about writing.* If a report is to be written, does the child have simple knowledges about correct and incorrect forms of language, punctuation, capitalizing, and paragraphing? Does he know how to write a paper from an outline? Absence of these knowledges may be at the base of his failure to appear well before his classmates and may be the basic cause for his lack of interest in activities which have to do with discussion following study.

The above analysis outlines the main types of information which are useful in the study situation. A teacher who is anxious to improve the study habits of her pupils must make sure of the child's status with respect to these knowledges and take measures to improve them where they are weak.

Habits in study. — It was shown in the discussion in Chapter X that there are many complex habits involved in ability to study. The child may have some good habits and some bad, or he may have formed no system-

atic habits at all. Knowledge of the right things to do does not insure that the right thing will be done. Many teachers have a theoretical knowledge of study habits desirable for children but fail to have children form those habits.

In the following summary certain habits useful in study are mentioned and suggestive questions given with each to enable the teacher to make more easily a diagnosis of the study habits of children.

1. *Habit of attention.* Does the child go to work with a will and can he remain at work for a reasonable amount of time? If not, there is need for finding out why he can not do this and for developing the power of attention.

2. *Open-mindedness.* Is the child habitually open-minded or does he draw his conclusions too quickly and refuse to hold tentative opinions about things?

3. *Habit of using books and the library.* Does the child consult reference books when in need of information? Does he read in the library or does he refuse to engage in these activities except when forced to do so? When so engaged does he utilize the knowledges about books and libraries which you have taught him?

4. *Habit of note-taking.* Does the child take notes well without urging and for his own purposes, or must he be compelled to do so? Does he utilize, when taking notes, the knowledges about note-taking which are available?

5. *Methods of studying.* Does the child utilize the habits of studying that have been suggested to him by the teacher or does he attack each lesson in an unsystematic and purposeless way?

6. *Habit of summarizing.* Does the child summarize habitually or only when forced to do so by the teacher?

7. *Reading for ideas.* Does the child habitually read for ideas rather than for words? Or is he so engaged with mechanics that he does not comprehend well the material he is reading?

8. *Judging the worth of what he is reading or using.* Does the child habitually assume the attitude of critical judgment toward the material he has to read, or does he read it thoughtlessly and without purpose?

9. *Habit of effective rate of reading.* Is the child's rate of reading habitually effective or does he not know how to utilize rate of reading economically?

10. *Habit of thinking.* Does the child think as he reads? Has he learned how to compare one idea with another and draw conclusions? Does he need practice in the simple beginnings of thinking?

11. *Habit of following directions accurately.* Does the child habitually use care in following directions accurately or is he hasty and careless in such matters? If the latter, this may be a basic cause of failure in successful study.

12. *Habit of purposeful reading.* Does the child habitually work with a problem or question in mind? Does he know what he wants and why he wants it?

13. *Correct physical habits.* Does the child habitually assume the correct physical habits in study or does he use wrong positions, make poor use of light, etc.?

For a fuller discussion of the significance of these habits the reader may refer to Chapter X again.

It should be clear that a diagnosis of study difficulties

in any manner complete, should make a survey of these and other habits which have to do with effective study.

Study skill. — A large part of study involves skill in using books. Since that is true, the instruction in reading and the diagnosis of faults in silent and oral reading will be directly applied here to study. Such a chart as the following may be used in attempting to analyze the reading and study skills of a child deficient in study ability. Deficiencies in other skills such as writing ability, ability to handle books and aids to study, language ability, and skill in methods of study are suggested in the preceding pages.

It should be pointed out here that skills when practiced sufficiently become habits. Reading skills become reading habits; writing skills become writing habits, etc. We train for efficiency these skills specifically in training periods. Later we observe them working in subject situations if our training has been successful.

TENTATIVE INDIVIDUAL DIAGNOSTIC CHART FOR DIAGNOSIS OF WEAKNESSES IN READING

I. *Physical conditions.*
   1. Is the child well nourished?
   2. Are his height and weight normal for his age?
   3. Has he enlarged tonsils? Or adenoids?
   4. Are the teeth defective? Are eyes normal?
   5. Does the health examination show any other remediable defects?

II. *Home environment.*
   1. Is the child of American or foreign parentage?
   2. Is a foreign language spoken habitually in the home?
   3. Are the parents literate?

4. Are there books and magazines in the home?
5. Is the child encouraged to use the public library?
6. Do the parents believe in and encourage education?
7. Is the child required to keep good hours at home?
8. What possible moral influences affect school results adversely?

III. *Mechanics of reading.*

1. Can the child pronounce words independently?
2. Are eye movements regular and rhythmic?
3. Does the child use lips in reading silently?
4. Does the child point with the finger?
5. Is the oral reading smooth and expressive or jerky and monotonous?
6. What is the rate of reading?
   a. On narrative material?
   b. On factual material?
7. What is his comprehension score and where does the child place with reference to any standard?
8. What evidences are there of an inadequate vocabulary?
9. Is the child unduly conscious of phonetic elements, or does he seem to have no sense of them?
10. Has oral reading been unduly emphasized with this child?
11. Can the child reproduce readily such simple material as he may be called upon to read? Is reproduction (*a*) inaccurate, or (*b*) halting and unready?
12. In oral reading do you find an undue number of any of the following?
    a. Repetitions.
    b. Insertions.
    c. Substitutions.
    d. Mispronunciations.
    e. Omissions.
13. Is the child an habitual word reader?

IV. *Comprehension.*

1. Does the child answer simple factual questions accurately?
2. Can he find a given word or phrase in a text readily?
3. Can he follow a simple direction?

4. Does he seem to understand the majority of the words in material appropriate for his grade?
5. Can he find the main ideas in sentences and paragraphs readily?
6. Does he omit parts of ideas due to a short unit of recognition?
7. Does he give general thoughts instead of specific illustrations?
8. Does he seem to prefer to read orally rather than silently?
9. Can he illustrate by drawing, cutting, or construction appropriate sentences and paragraphs?
10. Can he reproduce the thought of the author in his own words?
11. Does he substitute his own illustrations for those of the author?
12. Does he seem to prefer to memorize rather than to restate the author's ideas in his own words?
13. Can he supplement the ideas of the text?

V. *Organization.*
1. Can the pupil get the main idea of the material?
2. Can he pick out the subordinate ideas?
3. Can he make a simple outline of facts?
4. Can he summarize adequately either orally or in writing?
5. Can he reproduce from an outline?
6. Can he gather answers to problems and organize them in outline form?

VI. *Retention.*
1. Are there evidences of any of the following?
   a. Faulty word memory.
   b. Faulty memory for ideas.
   c. Lack of interest in the material.
   d. Lack of interest in reading in general.
   e. Defective memory due to other physical causes.
2. Is immediate memory good and delayed memory poor or *vice versa?*

VII. *Probable causes of defects.* (Check those that apply.)
1. Poor home conditions —
   a. Moral.
   b. Physical.

2. Bad physical condition due to —
   a. Malnutrition.
   b. Lack of sleep.
   c. Poor air.
   d. Overwork.
   e. Bad eyes, teeth, tonsils.
   f. Other physical causes.
3. Lack of interest or motive due to —
   a. Poor encouragement at home.
   b. Habitual failure.
   c. Too difficult material.
   d. Lack of opportunity to read.
4. Poor intelligence.
5. Bad eye movements.
6. Excessive lip movements.
7. Lack of vocabulary due to —
   a. Foreign parentage.
   b. Inadequate practice.
   c. Practice on wrong words.
8. Too little phonic training.
9. Too much phonic training.
10. Too much oral reading.
11. Lack of practice in rapid silent reading.
12. Poor rate of reading.
13. Poor comprehension due to —
   a. Poor vocabulary.
   b. Insufficient background of experience.
   c. Inability to pronounce words.
   d. Inability to visualize words.
   e. Poor meaning vocabulary.
   f. Undue emphasis on oral reading.
   g. Slow rate.
14. Poor organization due to —
   a. Inability to grasp main thought.
   b. Inability to find supporting ideas.
   c. Inability to outline.
   d. Inability to summarize.
   e. Inability to reproduce.
   f. Inability to retain.

15. Poor memory due to —
    a. Physical causes.
    b. Lack of interest.

VIII. *Types of remedial work suggested for this child.* (Check appropriate ones.)

1. Phonic exercises — more or less.
2. Word drills and vocabulary exercises.
3. Phrase and sentence drills — flash.
4. Dictionary study and word drill.
5. Rapid extensive reading of easy material.
6. Increased number of comprehension and organization exercises.
7. Special attention to motivation.
8. Reproduction exercises.
9. Exercises in outlining, summarizing, and reviewing.
10. Exercises in drawing, construction, and following directions.
11. More silent reading of all sorts.
12. Decreased attention to oral reading.
13. Exercises for purpose of increasing eye-voice span.
14. Intensive training for purpose of establishing regular and rhythmic eye movements.
15. More attention to content and less to form.
16. Extensive library reading.

Name _____ Grade _____

Time Examined _____ I.Q. _____

Comprehension: { Oral _____ / Silent _____ } Rate { Oral _____ / Silent _____ }

Results _____

Diagnosing the class as a whole. — The running comments on attitudes, knowledges, habits, and skills in

study are now thrown into the form of a tentative diagnostic chart for use with a class as a whole. It may be said in this connection that a diagnostic chart in reading ability will do much to enable the teacher to make a more complete diagnosis of the whole study situation. Such additional information as may be available in the form of physical records, intelligence and achievement tests, etc., should be used in making a diagnosis. School marks, too, are very significant. Most of these data will reveal the presence of trouble, but will not necessarily give the causes. Intelligence quotients, reading quotients, arithmetic quotients, etc., may show that the child is weak, but they may fail to show why he is weak. The following suggestive analysis will enable the teacher to detect gross weaknesses in the class as a whole which need remedial treatment.

TENTATIVE OUTLINE OF SUGGESTIONS FOR DIAGNOSING A CLASS WEAK IN STUDY

I. *Attitudes toward study.*
   1. Examine the causes for lack of interest in the subject.
      a. Are you teaching material in itself worth while?
      b. Is it too difficult or too easy?
      c. Are you using memoriter methods?
      d. Do you emphasize real problems?
      e. Have you made a systematic attempt to make these children believe that study is worth while?
      f. Do you praise good work and do you show results in study by concrete methods?
      g. Are the children more interested in other activities than results in the classroom work? Why?
      h. Is it possible that you do not believe sufficiently yourself in study and its value?

i. Do you give sufficient opportunity for your pupils to do things, make things, discuss topics, and in other ways present the results of their work to others?

j. Do you encourage children to think as well as to recite what the book says?

k. Does your class engage readily in discussion, reporting, and the like?

l. Do you have interesting supplementary books and encourage your pupils to read in them, report from them, and discuss what they have given?

m. Do you show children the value of what they are studying in terms of their uses in life, or do you habitually ignore such matters and make no such practical applications?

n. Do you habitually connect what children are to study with what they already know — relate the new to the old?

o. Do you study your class as individuals and try to rouse each one to exert his full powers, or do you teach them as a class?

p. Do you do most of the work, talk a great deal, question incessantly, or do you encourage the pupils to self-activity?

II. *Knowledges about study.*

1. Do your pupils know anything about methods of study?
2. Are they conscious of the fact that there are laws and rules for learning?
3. Do you instruct them systematically in the best methods of work?
4. Do they realize how important is the use of books in study?
5. Do they know that there are interesting books other than the textbook on each subject that they are studying?
6. Have you instructed them in reading, rereading, outlining, summarizing, how to make a report, etc.?
7. Do they know about great men who have been great students and what their successes have been?
8. Have you made a direct attack upon the problem of furnishing pupils with a definite body of knowledge about this whole subject?
9. Do they know the effects of time, place, materials, etc., on results in study?

III. *Study habits.*

1. Have you checked up on the study habits of your pupils?
2. Do they study at home? How much? Under what conditions?
3. Do their parents encourage study or keep them from it?
4. Do they know how to use books in study — to find references, to supplement the textbook through further reading, etc.?
5. Do they habitually memorize what they read?
6. Do they discover problems when they study?
7. Do they question what they read?
8. Do they believe the textbook implicitly in all things, or do they reserve judgment on certain points?
9. Do they make notes, outlines, summaries, etc.?
10. Do they review systematically?
11. How do they prepare a textbook assignment?
12. How do they prepare each particular type of assignment you give them and what bad habits have they?

IV. *Skills in study.*

1. Do your pupils read at a standard rate and with standard comprehension in reading?
2. Are there obvious defects in eye movements, excessive lip movement, difficulties in word attack, and other mechanical reading difficulties?
3. Can the pupils as a whole read for certain specific purposes?
   a. To answer simple questions of fact.
   b. To find answers to problems.
   c. To reproduce the main thought and the supporting details.
   d. To select certain facts needed to prove a point in a discussion.
   e. To evaluate the material in the light of their problem or question.
   f. To supplement the thought of the author.
   g. To gather new material for their problems.
   h. To formulate the question the material answers.
   i. To evaluate the form in which the material is presented.
   j. To select pictures or illustrations for their own purposes.
   k. To get directions for constructive activities.

4. Can the pupils use books and the library?
   a. Can they use the table of contents and index of a book?
   b. Can they use the catalog index to find material?
5. Are your pupils handicapped in making records of what they have read or thought about?
   a. Can they make simple running notes?
   b. Can they outline on a card for oral reproduction?
   c. Can they outline for written reproduction?
   d. Can they use a notebook efficiently?
   e. Can they write a simple paragraph on a problem after having gathered material from one or more sources?
6. Reporting and discussion.
   a. Can your pupils tell simply in reasonably correct English what they think about a problem?
   b. Can they reproduce what they have read, definitely and accurately?
   c. Can they make a simple report from outline?
   d. Can they discuss a problem in the light of evidence they have gathered and prove their points from the evidence?

The significance of the above analysis. — The suggestive outline above, while not complete in every detail, will give the teacher a method of attack upon the diagnosis of class difficulties in study. Such an analysis will reveal certain weaknesses which will demand remedial treatment. A complete discussion of every problem suggested above is impracticable here, but sufficient comment has been made in preceding chapters to show the teacher what is meant by each problem.

After a general analysis of conditions has been made, appropriate remedial instruction may be begun. This instruction will be of two general types: (*a*) remedial instruction in skills of reading and (*b*) remedial instruction in application of these skills and others in content situations, or let us call it, remedial instruction in study.

The remedial instruction in reading is suggested in Part I of this chapter. It may take the form of definite drills on specific reading skills.

Class remedial instruction in study. — If a class is noticeably weak in certain general aspects of study, the teacher will need to attack the weaknesses directly and emphasize with the class certain attitudes, knowledges, skills, and habits. First the class must be made conscious of its own weaknesses and aroused to a desire to overcome them. It must then embark upon a definite campaign of improvement. In case attitudes are bad, motives are lacking, and the morale of the class is low, the teacher will need to examine her methods to see if they are at fault, challenge the subject matter, and investigate home conditions. Whatever is correctible should be corrected as rapidly as possible. Suitable books, stories, or poems might be read and discussed as a means of encouraging better ideals.

Habits must be investigated. — Habits of study must be investigated and discussed, and weaknesses pointed out. Such habits as are bad should be attacked directly. Each pupil must set as his goal the elimination of any such habits as retard his progress. Progress should be noted and reported. Good results should be praised. The teacher must become the counsellor of each individual student in these matters. In addition the instruction in reading must take care of the formation and perfection of habits that have not been already formed or that have been imperfectly formed. The following of a course in reading and study as outlined in Chapter XII will take care of the system-

atic formation of such habits, but in addition there must be this direct personal interest of the teacher in the individual student who has failed to form good habits or has definitely formed bad ones.

Specific study skills must be trained. — Specific study skills aside from those which are taken care of in the formal reading instruction must be emphasized and trained. Skills in using books for informational purposes, use of the library, and written and oral English skills, must be checked and appropriate remedial instruction applied. A complete list of such skills as are involved in study has not been made, but enough has been suggested in the diagnostic outline in this chapter to give the general outline of procedure.

Remedial instruction must be direct. — The remedial instruction in study habits, attitudes, knowledges, and skills must not be left to incidental treatment. It should probably be divided between the formal instruction in the work type of reading, and the lessons in history, geography, science, and other content subjects. It would be well for the teacher to set aside some particular time for instruction in study apart from reading and to take up the matter directly with the children as suggested. If preferred, the main work may be done in connection with a particular subject and care taken then to practice what has been learned in additional subject situations. In departmental schools or platoon schools all teachers will have to be instructed in the plans for improving study and occasional conferences must be held in which a check-up of results and needed improvements is made.

Remedial instruction now especially necessary. — In many schools a large part of the instruction in how to study and training in attitudes, habits, and skills, must at present take the form of remedial instruction in the middle and upper grades. A well organized course in study has not generally been given. This means that children either know little about it or have formed undesirable habits which must be corrected. As better methods of developing ability to study are devised and taught, such remedial work should become less necessary.

A study survey. — It is most important that in each school a study survey be made and weaknesses listed. The instruction then will lay emphasis upon the weaknesses discovered and thus save much time in needlessly stressing things which are already known. Such a survey will reveal weaknesses which the teacher cannot know from general observation. A carefully written theme by each child on "How I Study Geography," and on other subjects will reveal many facts about the children's habits to the teacher. Careful records of classes and individuals should be kept and studied for the purpose of finding out individual difficulties.

Each subject presents special difficulties. — The teacher must realize that there are reading and study difficulties in connection with each subject she teaches. She is responsible for finding out whether or not her pupils know anything about studying her subject and for teaching them how to study it economically. For this purpose she must carefully check up on the pupils' ability to read and study her subject and give them proper remedial instruction.

SUMMARY OF THE CHAPTER

This chapter emphasizes the importance of diagnosis and remedial treatment in reading and study, showing first how diagnostic work originated and has grown. The causes of reading defects and their diagnosis and treatment as presented in the literature of the day are reviewed. Types of remedial instruction most commonly used by different experimenters and teachers are listed. Finally a critical estimate of this work is given and its significance in classroom instruction pointed out. In the second part of the chapter the extension of the idea of diagnostic and remedial instruction to the whole study situation is suggested. It is shown that attitudes toward study, knowledge of methods of study, and the presence or absence of good study habits and good study skills must be checked up if efficient study is to take place. Study skills are shown to include reading skills plus ability to use the library, ability to report in writing and in speech, and certain other language abilities. A chart for diagnosing individual weaknesses and a tentative diagnostic chart for analysis of classes weak in study are given. Finally the remedial instruction to follow such diagnosis is suggested in its broader outlines.

SUGGESTIVE PROBLEMS

1. How long have diagnostic and remedial measures been used in reading instruction?
2. Show that they are or are not widely used now.
3. What is needed in order to make such studies as those of Gray and others useful to the classroom teacher?

4. What are the chief causes for failure of children to read well?

5. What types of errors are most prevalent?

6. What types of remedial treatment have been successfully used?

7. What use can be made of Gray's studies of individual children?

8. In what ways are diagnostic studies suggestive of improved methods of class instruction?

9. Why is extension of diagnosis in reading advisable for study as a whole?

10. What factors in study must be carefully analyzed and studied in addition to reading skills?

11. What is the significance of attitude, knowledge, habits, skill?

12. Would an analysis of reading skills give all the possible weaknesses in study a child might have?

13. What use can you see for the tentative diagnostic chart for diagnosing class weaknesses in study?

14. How much individual diagnostic work can the teacher do when she has a class of fifty children?

15. How much individual diagnostic work can the teacher in a departmental and platoon school do?

16. What general methods for remedial work following diagnostic work is suggested?

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3. Gates, A. T. — *The Improvement of Reading* (a new book published after this chapter was written. An excellent practical handbook for teachers.) Macmillan, 1927.

4. Germane, C. E., and Germane, E. G. — *Silent Reading*, Chapters VII and VIII. Row, Peterson, 1922.

5. Gray, W. S. — "Difficulties in Silent Reading," *Twentieth Yearbook*, Part II, pp. 39–53. Public School Publishing Company, 1921.

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7. *Twenty-fourth Yearbook of the National Society for the Study of Education*, Part I, pp. 275–88. Public School Publishing Company, 1925.

8. Uhl, W. L. — *The Materials of Reading*, Chapter XI. Silver, 1924.

9. Wheat, H. G. — *The Teaching of Reading*, Chapter XVII. Ginn, 1923.

CHAPTER XVII

Reading, Study, and Newer Methods of Education

Newer methods of education. — It has often been said that there is nothing new under the sun. What now seems new has very often been advocated by educational philosophers long passed away. New methods advocated by the reformers of the Middle Ages are just now being adopted for general use. Nevertheless, there are always methods that are new to a single generation. In the past few years an educational renaissance has taken place, largely due to the application of scientific method to the discovery of educational truth and the application of statistical measurements to the study of educational problems. Among those methods which have accompanied the measurement movement are the problem and project methods of teaching, the socialized recitation, the discussion lesson, the reporting lesson, a revived interest in individual instruction, and the introduction of the reference method of instruction in content subjects. All these methods tend toward a greater freedom in the development of the individual child, a larger emphasis upon group consciousness, and a more extensive and richer method of giving the child his training in geography,

history, and other subjects. There has been an increasing tendency to emphasize the extensive method of reference reading as opposed to the intensive textbook study of the past. This increased use of books requires much greater skill in their use. While this method has not been widely used in the country at large, there is every assurance that it will be. Supervised or directed study has been an important newer method in education also, although it has probably been incidentally used by some teachers for many years. All these methods require added skill in the use of books and reference materials. For this reason the development of a detailed program of teaching children to read and study is very necessary.

Reports of Committee on Reading. — The recent report of the Committee on Reading of the National Society for the Study of Education is the first of national scope which points out the way for the development of a program in reading and study which will adequately prepare children to participate in this richer and broader experience with the world of books. Various writers have advocated the adoption of a more extensive and detailed program of reading and study, but this is the first time that a committee, composed of leading investigators and teachers of reading, has outlined the general features of such a program. Extensive reading to parallel the intensive instruction in the mechanics of reading is specified by the committee as part of a plan. Definite suggestions for the making of a course of study in reading are given.[1] Every teacher

[1] *Twenty-fourth Yearbook*, Part V. Chapter III.

and supervisor of reading should carefully study this entire report. It is having a marked influence upon the teaching of reading and the development of study habits in American elementary schools and junior high schools.

Reading and newer methods. — It is now becoming generally accepted as fact that the child cannot be successful in gaining a real education without a broad contact with the world through observation of the persons, places, events, and processes about him, through listening to others who tell him about the world which he cannot see, or who call his attention to the things he has not seen, and through getting experience vicariously by means of books. The textbook method of teaching is giving away to extensive experience; instead of being almost the sole method of imparting knowledge to children it is becoming only one of several methods. It should be plain that this larger and richer program cannot be realized except by making the child a rapid, accurate, and extensive reader. He must learn to read "for a variety of purposes" and with a minimum of interference from imperfect mechanics. "Reading to learn" must occupy a large share of his time. He cannot learn to read without much practice in reading. The program of reading and study as outlined in this book becomes then a very significant means of realizing the most from the enriched opportunities that are given to the elementary school child.

Problem and project methods and the reading-study program. — The use of either the problem or the project method, or of a combination of the two, presupposes a

definite ability in the use of books as tools in knowledge-getting. The child can be taught to think, through observation and discussion, without the use of books; but if he is to learn to use the thoughts of others in solving his problems and getting ideas for his projects, he must learn to use books economically and skillfully. A program for developing skill in the use of books by direct and specific teaching, then, makes possible efficient work in solving problems and carrying out projects. A detailed program in reading and study takes care of the mechanics. The provision for extensive reading of books of various sorts gives abundant practice in the use of books. The correlation of the problem and project work in geography, history, and other subjects, makes these subjects an integral part of the process of teaching children to read and study.

Socialized methods and the reading-study program. — The socialized recitation is defined by Stormzand as the "socialized discussion."[1] The distinction made by this writer between this method and the "discussion method" is that in the socialized recitation the control is largely in the hands of the children. This method is a learning method, rather than a method of drill or testing. Considered from the standpoint of ability to read and study, the socialized lesson is an opportunity for children to utilize the knowledge they have gained from observation and reading. The more efficient their reading, the more accurate their knowledge of books and their use, the greater their skill in

[1] Stormzand, M. J. *Progressive Methods of Teaching*, Chapter X, pp. 268–84. Houghton, 1924.

referring to sources, and the greater their respect for accuracy in reporting such sources of knowledge, the more successful such lessons will be. The socialized recitation which is not based upon accurate and extensive information becomes a farce. No socialized method can succeed which is not thoroughly grounded upon a detailed and specific plan for teaching children to read and study.

Discussion method and the reading-study program. — The discussion method,[1] which presupposes that children will learn through a free discussion of problems or topics under consideration, must also be founded upon a thorough training in the ability to use books in study. Children must be taught in their discussions to refer to books for accurate information, when a point is in dispute, and to resist wasting time in futile affirmation or denial of disputed points. The use of the index in looking up doubtful points, rapidity in locating such points, accuracy in reading them or in reproducing the thought — all these must be provided for if the discussion method is to be of value.

The reporting lesson and the reading-study program. — The reporting lesson, generally a form of the socialized recitation, demands for its success accurate observation, or accurate reading of material in books. Pupils deficient in mechanical ability — slow in reading and inaccurate in comprehension — cannot realize the full measure of profit from such lessons. In addition to ability to read rapidly and accurately and retain well, the child must also have some appreciation of the

[1] *Op. cit.*, Chapter X, pp. 259–68.

need for effective presentation of the facts acquired. This involves at times the use of notes, effective oral reading, and ability to write an effective page of material. These abilities are provided for in the reading-study program outlined in the previous chapters. The reporting lesson, as well as other newer methods, depends for its efficiency upon a well-laid groundwork of attitudes, knowledges, skills, and habits of reading and study.

Individual instruction and the reading-study program. — While individual instruction has more generally been utilized in connection with the skill subjects, if any extensive plan of individual instruction, such as the Dalton Laboratory Plan,[1] is to be used in acquiring information in books, skill in reading and the use of books is an essential prerequisite. Experiments in teaching children to read by individual instruction conducted by Courtis[2] at Detroit seem to indicate that even the fundamental skills in reading may be successfully taught by individual rather than by group instruction. However that may be, individual instruction in content subjects must be based upon a careful detailed plan of instruction, individual or group, in the specific attitudes, knowledges, skills, and habits outlined in Chapter XII and the following chapters.

Supervised study, directed study, and the reading-study program. — The supervised study movement in the past few years has gradually been giving way to

[1] Wilson, L. L. W., and others. *Educating for Responsibility.* Macmillan, 1926.

[2] Courtis, S. A., and Smith, N. B. *Picture-Story Reading Lessons.* World Book, 1924.

the movement for teaching children to study as an integral part of their instruction in the content subjects. It has been realized by many that supervised study, as a special administrative device, can never take the place of systematic instruction in how to study each subject. No generalized plan of supervised study, with formal periods for such instruction as a teacher wishes to give, can succeed in developing better study habits, unless the teacher follows a definite detailed program such as that outlined in Chapter XII. A recent book on Supervised Study[1] shows the tendency to cease generalizing about instruction in study by including references to the "Rochester Chart of Reading Attainments" and its course in the development of effective study habits and the use of books. The program suggested in this book can be utilized in a supervised study plan of the formal sort, with definite division of class periods into study periods and recitation periods, or it can be utilized in connection with the regular instruction in the subject with no provision for a divided period, double period, or other administrative device.

Increasing use of reference books and reading-study program. — Increasing use of reference books is implied in all the foregoing discussion; but whether or not the teacher adopts the problem or project method, socialized method, individual instruction method, or the question-answer method, success in her work depends upon the ability of the child to read widely and use

[1] Hall-Quest, A. L. *Supervised Study in the Elementary School.* Macmillan, 1924.

books for reference purposes in study of the topical sort. She must therefore provide these skills definitely by means of a definite program such as that outlined in these pages.

Teaching the child to use the textbook. — Even in most schools, where textbooks still constitute the chief source of written material and form the basis of all instruction in reading and study, great improvement in the results of study may be made by definitely teaching the children how to use the textbook. Teaching the child to read the textbook for various purposes, teaching him to select what to learn by heart and what to neglect, how to review, and how to discuss material in the light of the textbook presentation — all these would vastly improve the work even in the traditional school. Turning to such measures for the improvement of classroom teaching implies the acceptance of the point of view developed throughout this book — the giving of detailed instruction in how to read and how to study by direct methods and as the part of a conscious plan to teach children skill in the use of the tools of knowledge getting.[1]

SUMMARY OF THE CHAPTER

In this chapter the relation between reading and study and various newer methods of teaching has been pointed out. It is shown that all the newer methods of teaching are dependent for their success upon a

[1] *See* Parker, S. C. *Types of Elementary Teaching and Learning,* pp. 385–86; *also* Stormzand, M. J. *Progressive Methods of Teaching,* Chapter I.

systematic, detailed, and purposeful course in the development of ability to read and study. None of the methods which involve the use of reference materials can be successful unless they are prefaced by and accompanied by skilled teaching of the mechanics of reading, practice in extensive rapid reading, and definite instruction in the use of books and methods of study. The ultimate object of teaching is to free the child from the teacher — to so provide him with the tools of knowledge getting that the use of books becomes a life habit rather than a temporary, forced occupation. No new method can fully succeed which is not based upon thorough training in the most important prerequisites to learning.

SUGGESTIVE PROBLEMS

1. Can it be said that the present methods of developing ability to read are among the newest of new methods in education?

2. What further can you add to the discussion of the connection between the reading-study program and each of the newer methods mentioned in this chapter?

3. Are there other new methods of which the point of view advocated in this chapter is equally true?

4. What are the dangers in the extensive method of teaching children due to lack of efficiency on their part in ability to read and study?

5. What are some of the dangers in the discussion method due to lack of ability to read and study? In other newer forms of method?

6. Would you call the plan for developing reading and study ability in Chapter XII a supervised study plan?

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2. PARKER, S. C. — *Types of Elementary Teaching and Learning,* Chapter XI. Ginn, 1923.

3. STORMZAND, M. J. — *Progressive Methods in Education,* Chapters I and X. Houghton, 1924.

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